AUTOMOTIVE INDUSTRIES

AUTOMOTIVE and AVIATION MANUFACTURING
ENGINEERING • PRODUCTION • MANAGEMENT

MARCH 15, 1956

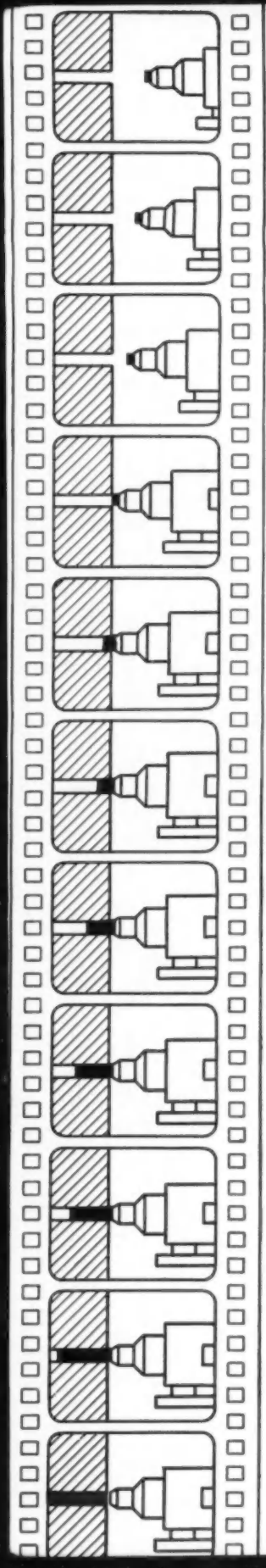
38th ANNUAL STATISTICAL ISSUE

A Comprehensive and Comparative Presentation
of Important Specifications and Statistics on

VEHICLES • AVIATION • ENGINES
PRODUCTION EQUIPMENT • MATERIALS

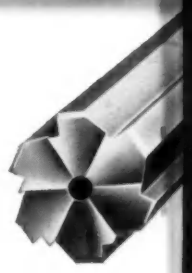
Complete Table of Contents, Pages 67 & 68

A CHILTON PUBLICATION



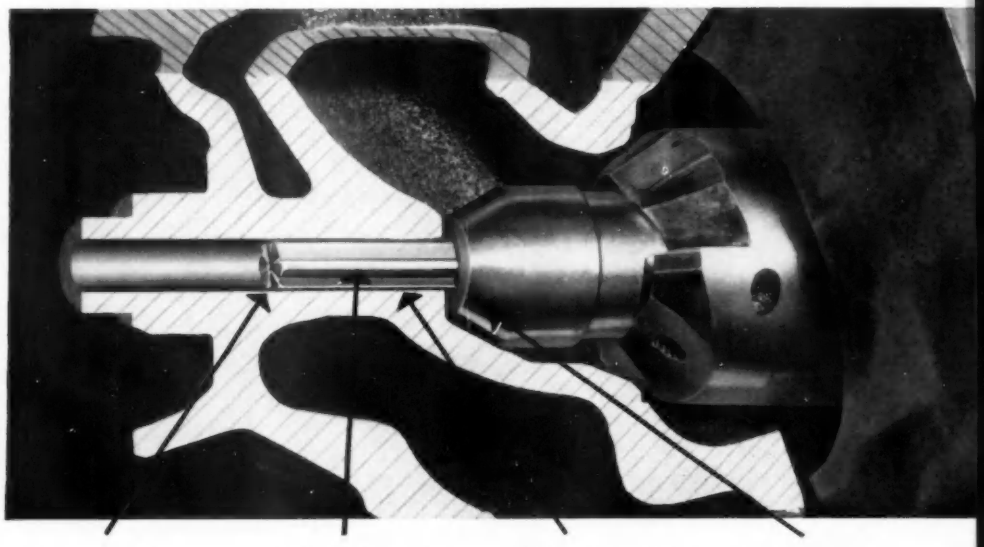
New Heald Method of

BORE REAMING



keeps small-hole finishing

on the STRAIGHT AND NARROW



CUTTING ACTION takes place here, at BORE REAMER end face.

FLUTED EDGES support BORE REAMER and provide chip clearance.

BORE REAMER, of solid tungsten carbide, feeds out into hole.

SUPPORT BUSHING rotates with the BORE REAMER.

IT'S NOT *boring*, not *reaming*—but a unique combination that gives you the desirable features of *both*. For long, small-diameter holes, BORE REAMING provides a high degree of accuracy and precision economically.

The BORE REAMING tool, or BORE REAMER, is firmly supported by a rotating bushing, immediately next to the face of the work, and is fed outward into the hole by a mechanical or hydraulic feed-out mechanism. Cutting action takes place only at the outer end edge of the BORE REAMER *face*. It penetrates as straight and true as a single-point boring tool, without a conventional reamer's tendency to follow irregularities in the drilled hole. Since the support bushing rotates with the BORE REAMER, the only wear is from the slow in-and-out movement of the tooling.

Finish size of any hole is determined solely by the BORE REAMER diameter—hence a change in hole size is simply a matter of changing the BORE REAMER, with no need for delicate tool adjustments.

If you do work that falls into the BORE REAMING class, this is something you should look into. Your Heald representative will be glad to give you the complete story. Remember, IT PAYS TO COME TO HEALD.

THE HEALD MACHINE COMPANY

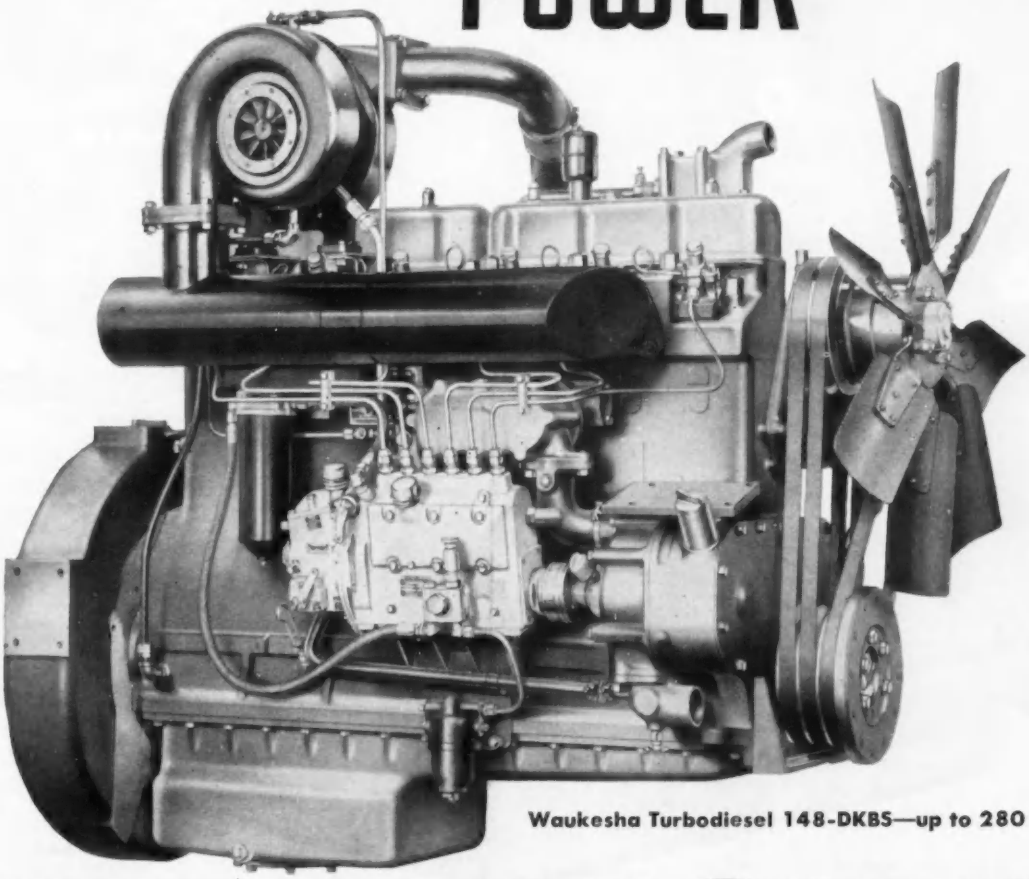
Subsidiary of The Cincinnati Milling Machine Co.

Worcester 6, Massachusetts

Chicago • Cleveland • Dayton • Detroit • Indianapolis • New York

HEALD®

MORE POWER TO YOU!



Waukesha Turbodiesel 148-DKBS—up to 280 hp

WAUKESHA Diesels

Compact, and power-packed—Waukesha 148-DKBS is a 6-cyl., 779 cu. in. Supercharged Diesel that has lively acceleration, clean burning, prompt starting, a tremendous reserve of power, and great overall economy. Waukesha's exhaust turbocharger system greatly increases horsepower—from 200 hp (of the normally aspirated 148-DKB) up to 280 hp at 2100 rpm in this Turbodiesel model. Send for Bulletin 1647.

WAUKESHA MOTOR COMPANY
Waukesha Wisconsin
New York • Tulsa • Los Angeles

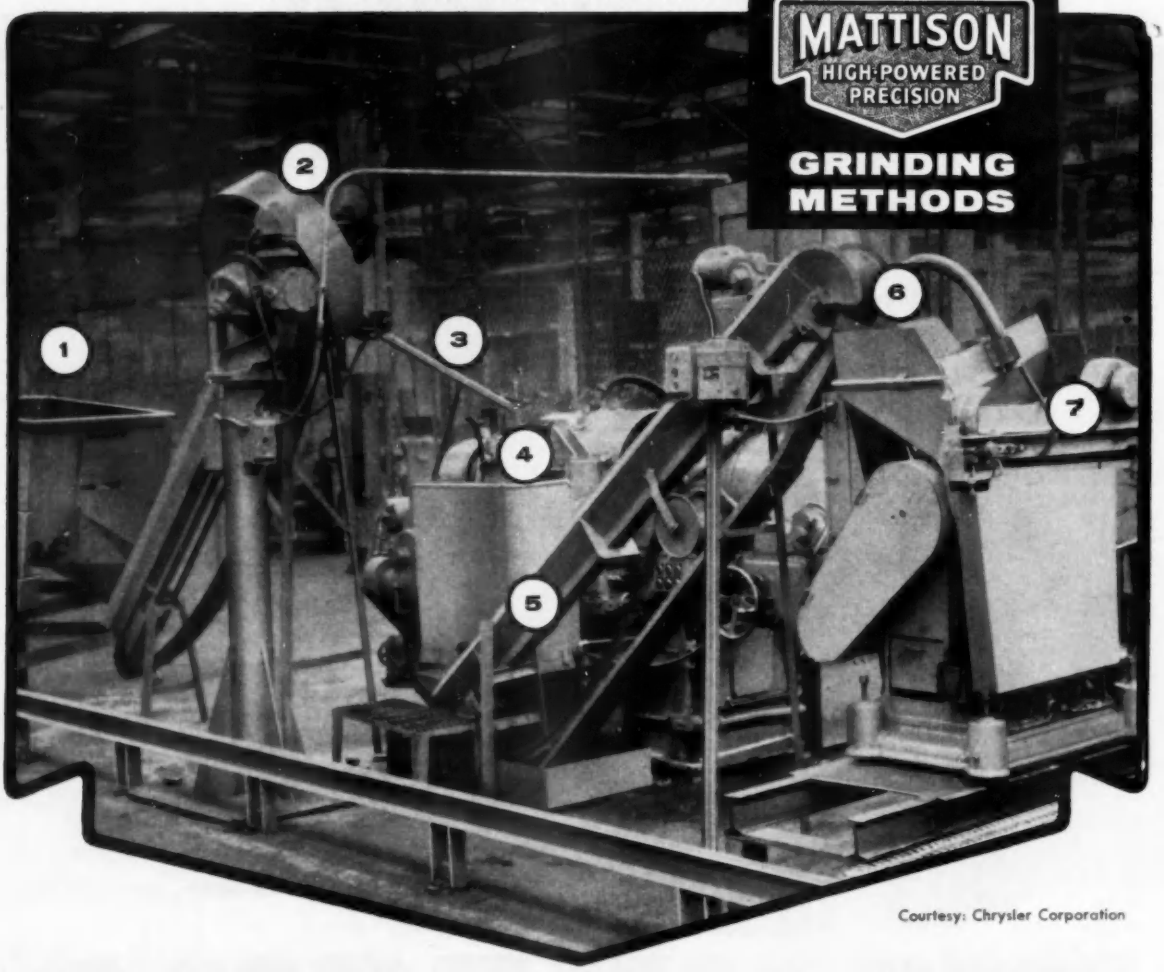


50th ANNIVERSARY Waukesha MOTOR 1906-1956

300

CASE HISTORY NO. 16—PISTON PINS

MATTISON
HIGH-POWERED PRECISION
GRINDING METHODS



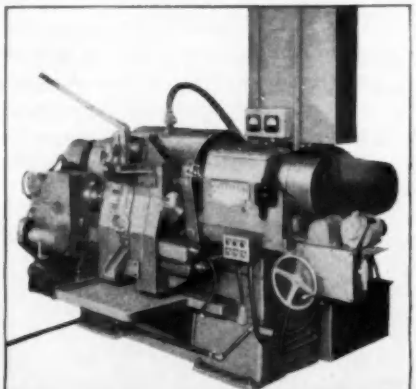
Courtesy: Chrysler Corporation

Standard machine meets automatic requirements... grinds two sides of pins in excess of 1300 per hour!

Chrysler Corporation's New Castle, Ind. plant uses a Mattison No. 221 Double Disc Grinder to machine both ends of piston pins for six and eight cylinder engines for Chrysler-made cars and trucks at a production rate of more than 1300 per hour with a 20 micro inch finish. The machine produces at a rate that keeps it ahead of the production line. Automatic loading and sizing make it possible to run the machine with minimum attention by the operator. Tolerances are always well within specifications.

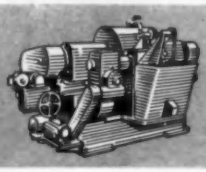
Operation of the grinder can be traced according to the numbers on the photo: 1) loading hopper for pins; 2) stacking drum; 3) channel carrying pins into grinder; 4) grinding station; 5) belt conveyor to next station; 6) loading hopper for next operation; 7) conveyor to centerless grinders for finishing o. d.

Stock removal remains constant because of the automatic equalization feature of the machine. These versatile double disc grinders may be the answer to your machining problem, too!



This double disc grinder produces more piston pins than the engine line can use with minimum supervision.

MATTISON
MACHINE WORKS
ROCKFORD ILL. U.S.A.



HIGH-POWERED
PRECISION
SURFACE
GRINDERS

AUTOMOTIVE INDUSTRIES

A CHILTON MAGAZINE — PUBLISHED SEMI-MONTHLY

MARCH 15, 1956 — VOL. 114, NO. 6

EDITORIAL STAFF

JAMES R. CUSTER, EDITOR

H. H. ROBERTS, Engineering Editor
ANDREW SHEARER, News & Markets Editor
THOMAS MAC NEW, Eastern Editor
ROBERT P. HOMER, Editorial Production Mgr.
MARCUS AINSWORTH, Statistical Editor

CHARLES A. WEINERT, Associate Editor
SAMUEL CUMMINGS, Assistant Editor
DIANE DAVIS, Art Editor
HOWARD KOHLBRENNER, Art Director

DETROIT

Joseph Geschelin, Detroit Editor
Leonard Westrate, News Editor, Detroit
Edward Janicki, Associate Ed., Detroit

WASHINGTON

George H. Baker, Washington Editor
Ray M. Stroupe, Washington News Editor
Neil R. Regeimbal, Washington News Ed.

LOS ANGELES

R. Raymond Kay
Pacific Coast Editor

BERN

Robert S. Braunschweig
European Correspondent

LONDON

David Scott
British Correspondent

Paul Wooton, Washington Member, Editorial Board

As part of its worldwide automotive and aviation news coverage, AUTOMOTIVE INDUSTRIES is serviced by International News Service and has editorial correspondents in major United States and foreign industrial centers.

BUSINESS DEPARTMENT

John C. Hildreth, Jr., Publisher
John F. Pfeffer, Asst. to Publisher
E. H. Miller, Advertising Mgr.
E. W. Hevner, Circulation Mgr.
John R. Flood, Market Research
Chestnut and 56th Sts.
Philadelphia 39, Pa.
Phone SHerwood 8-2000

REGIONAL MANAGERS

CHICAGO—John T. Hoole
916 London Guarantee and Accident Building
Chicago 1, Ill.
Phone FRanklin 2-4243

PHILA. and NEW YORK
Nelson W. Sieber
Chestnut and 56th Sts.
Philadelphia 39, Pa.
Phone SHerwood 8-2000
and
100 East 42nd St.
New York 17, N. Y.
Phone OXford 7-3400

DETROIT—Melvin B. Nylund
1015 Stephenson Bldg.
Detroit 2, Mich.
Phone TRinity 5-2090

CLEVELAND—Richard P. Keine
730 National City Bank Bldg.
Cleveland 14, Ohio
Phone CHerry 1-4188

LOS ANGELES—L. H. Jackson
3156 Wilshire Blvd.
Los Angeles 5, Calif.
Phone DUnkirk 7-2119

SAN FRANCISCO—R. J. Birch and Frank W. McKenzie
300 Montgomery St.
San Francisco 4, Calif.
Phone DOuglas 2-4393

One of the Publications Owned by
CHILTON COMPANY (INC.)

Executive Offices
Chestnut and 56th Streets, Philadelphia 39, Pa., U. S. A.

OFFICERS AND DIRECTORS

JOS. S. HILDRETH
Chairman of the Board

G. C. BUZBY, *President*

Vice-Presidents

P. M. Fahrendorf — Harry V. Duffy

William H. Vallar, *Treasurer* — John Blair Moffett, *Secretary*

George T. Hook — Robert E. McKenna
Maurice E. Cox — Irving E. Hand
Frank P. Tighe — Everit B. Terhune, Jr.
L. V. Rowlands — John C. Hildreth, Jr.
Russell W. Case, Jr.

COMPLETE TABLE OF CONTENTS, PAGES 67 and 68

MEMBER — National Business Publications, Inc. — Society of Business Magazine Editors — Audit Bureau of Circulations

Copyright 1956 by Chilton Company (Inc.)

AUTOMOTIVE INDUSTRIES is a consolidation of The Automobile (weekly) and the Motor Review (weekly) May, 1902; Dealer and Repairman (monthly), October, 1903; the Automobile Magazine (monthly), July, 1907, and the Horseless Age (weekly), founded in 1895, May, 1918.

EDITORIAL EXECUTIVE OFFICES, Chestnut and 56th Sts., Philadelphia 39, Pa., U. S. A. Cable address—Autoland, Philadelphia.

AUTOMOTIVE INDUSTRIES. Published semi-monthly by Chilton Co., Chestnut & 56th Sts., Phila. 39. Entered as Second Class Matter October 1, 1925, at the Post Office at Philadelphia, Pa.; Under the Act of Congress of March 3, 1879. In case of Non-Delivery Return Postage Guaranteed. Subscription price: United States, United States Possessions, 1 year $2.00, 2 years $3.00. Canadian and Foreign, 1 year $5.00, 2 years $8.00; single copies, 25 cents, except Statistical Issue (Mar. 15th), $1.00



U. S. AXLE has long been famous for custom-made precision shafts, machined from finest alloy steels. Now, with the addition of new shot peening equipment, U. S. "Custom-Engineered" Shafts can be *made up to 5 times tougher*, for extra advantages in every type of product.

LIGHTER WEIGHT
Extra strength permits using shafts of smaller diameter, reducing weight.

LONGER LIFE
In actual torsion tests, U. S. shot peened shafts outlasted unpeened shafts approximately 5 to 1!

"THE WORLD TURNS ON U. S. AXLES"

"Custom-Engineered"
AXLE SHAFTS
for every application

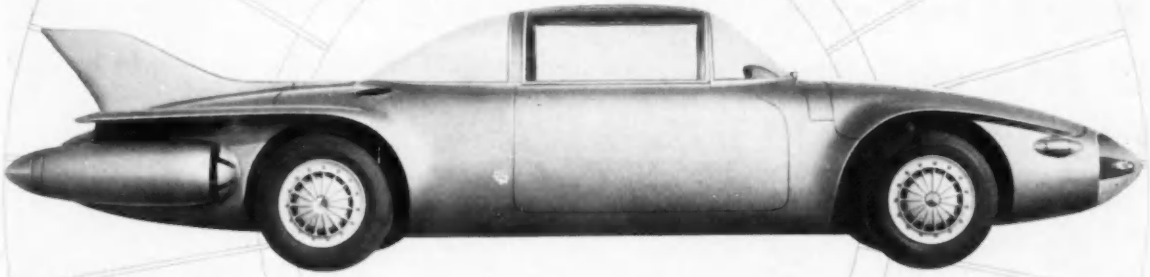


This illustrated folder will show you why U. S. AXLE is your best source for precision-made special shafts. Write for your copy today.

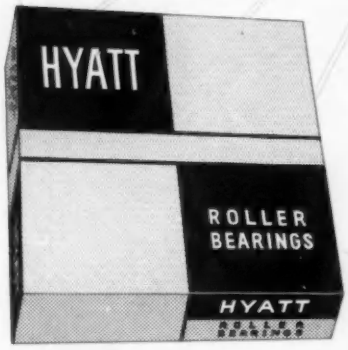
For a prompt quotation on a U. S. "Custom-Engineered" Shaft, to meet your needs, send us your blueprints and specifications.

THE US AXLE COMPANY, INC.
Since 1920 • Pottstown, Pennsylvania

HYATT HELPS FIREBIRD II SAVE FUEL!



Unique regenerator operates in 1300° F exhaust on special HYATT Roller Bearings



To enable the Firebird II to operate almost as economically as a conventional car, GM engineers designed a drum-type regenerator which revolves through the gas turbine exhaust, recovers 80% of its 1300° F heat, and transfers it to the intake air.

No ordinary bearings, however, could handle this job. So HYATT designed special roller bearings which operate efficiently and dependably in this punishing service. Just as dependably as do the millions of HYATT taper bearings which are used in *nearly half the automobiles being built today!*

Remember, HYATT is America's *first* and *foremost* builder of roller bearings—a major source of supply for the automotive industry. Hyatt Bearings Division of General Motors, Harrison, New Jersey.

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

Tourek

BALL JOINTS

The Recognized "STANDARD"



Tourek Ball Joint Linkages Can Be Specially Designed For Your Specific Needs!

Whatever length or style of Special Linkages you need, capable TOUREK Engineers will develop the ONE best and most economical design for your specific needs. Production and assembly operations can be scheduled to meet practically any reasonable delivery requirements. TOUREK facilities are large and modern and well coordinated. Special Linkages employing Ball Joints are made with extreme precision. Each assembly can be depended upon to equal or surpass the most exacting specifications . . for really *free transmission of motion!*

Leading Ball Joint buyers "Turn to TOUREK" for their special linkage requirements. During 36 years of specializing, we've developed thousands of types for various applications. Critical customers have always depended upon us for UNIFORM fine quality and the accuracy they need to assure top performance and long life.

Although the best in Ball Joints is an outstanding TOUREK specialty we also produce SCREW MACHINE PRODUCTS of every description, in large volume. If top quality and a really dependable source of supply are important to you, by all means write us today!

J. J. TOUREK MFG. CO.

ESTABLISHED 1920

1901 SOUTH KILBOURN AVENUE, CHICAGO 23, ILLINOIS

. . UP TO 2-5/8" DIAMETER SINGLE AND MULTIPLE SPINDLE MACHINES . . THREADING • TAPPING • MILLING • DRILLING • GRINDING • POLISHING • PLATING • HEAT TREATING • SILVER SOLDERING •

WORLD'S LARGEST MANUFACTURER OF "STANDARD" BALL JOINTS



On CATERPILLAR-Built Tractors . . .
VICTOR Sealing makes a power-full difference

Quality Sealing Products for Every Vital Point

- VICTOPAC
- VICTOR HEAD GASKETS
- VICTOLEX
- VICTOPRENE OIL SEALS
- VICTORITE
- VICTOR MANIFOLD GASKETS

Put the recommended Caterpillar machine on a job . . . and it packs plenty of reserve power under all conditions. Because every ounce of power these mighty machines produce is sealed-in for delivery to the drawbar.

Carefully engineered, long-life gaskets and oil seals prevent undue loss of compression, lubricants, coolant and hydraulic operating fluid. Caterpillar specifications require quality in sealing parts—and that makes this power-full difference.

Victor sealing is quality sealing—for all types of automotive, earth-moving, marine, industrial and agricultural machinery. Continuing research and development by Victor assure you of the best sealing materials . . . the widest choice for every need . . . and each Victor packing is clearly defined and classified by ASE-ASTM specifications.

Skill in product engineering, multiplying ever since 1909, and the industry's foremost production facilities complete your satisfaction when you seal with Victor.

Victor Mfg. & Gasket Co., P.O. Box 1333, Chicago 90, Ill. In Canada: Victor Mfg. & Gasket Co. of Canada Limited, Victor Drive and Chester St., St. Thomas, Ont.

VICTOR

Sealing Products *EXCLUSIVELY*

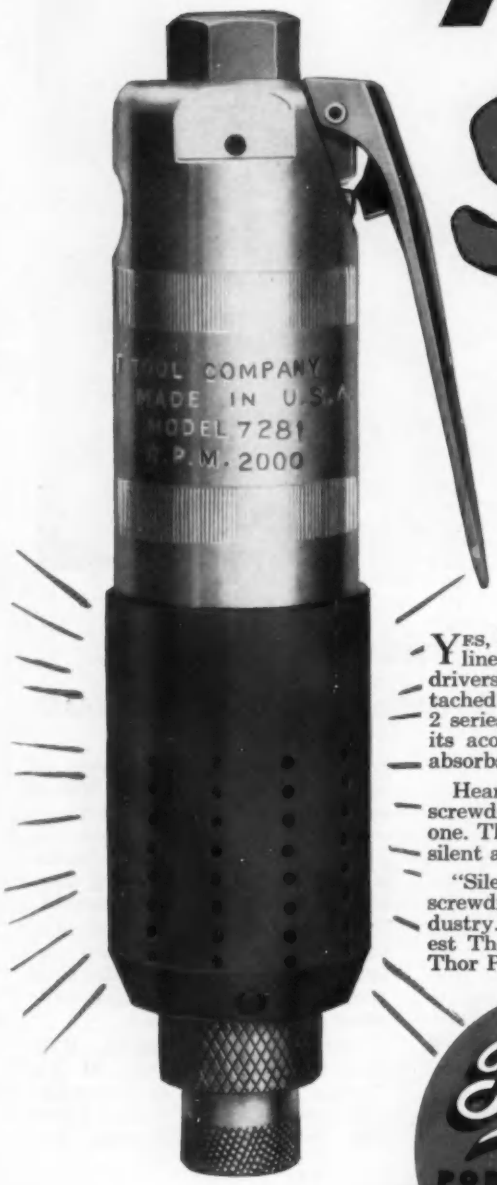
GASKETS • OIL SEALS • PACKINGS

Thor discovers how to muffle air motor noise

75% quieter!

NEW THOR Silentair SCREWDRIVERS

Less noise on your lines means more production, better employee relations and morale



YES, here is 75% less noise on your production line . . . the great new Thor "Silentair" Screwdrivers! A steel sleeve with 24 perforations is attached over the exhaust of any of these Thor No. 2 series straight screwdrivers. This sleeve, with its acoustical pattern of holes, breaks up and absorbs the sound of the air motor.

Hear the difference between standard air driven screwdrivers and Thor's new "Silentair." Try one. Then try the other. Then you'll know what silent air power can mean in your plant.

"Silentair" is optional equipment on Thor air screwdrivers—the most powerful available to industry. For a demonstration, contact your nearest Thor factory branch listed below, or write Thor Power Tool Company, Aurora, Illinois.



Quiet power on your lines lets employees do better work, improves output—fewer mishaps, mistakes.

Thor PORTABLE POWER TOOLS

THOR POWER TOOL COMPANY

Aurora, Illinois

Atlanta • Birmingham • Boston • Buffalo • Chicago • Cincinnati • Cleveland • Denver • Detroit • Houston • Los Angeles • Milwaukee • Newark • Long Island City, N.Y. • Philadelphia • Pittsburgh • St. Louis • San Francisco • Seattle • Toronto, Canada
Export Division, New York City



ANOTHER NEW INTERNATIONAL ...STEERED BY ROSS

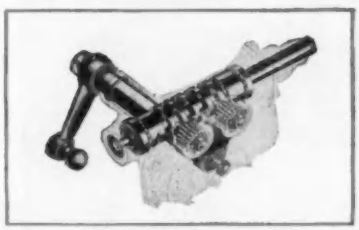
▶ **International Harvester and P-I-E** "team up"—for swift, dependable, economical schedules. And International Trucks handle with almost passenger car ease—thanks to *ROSS Steering.*

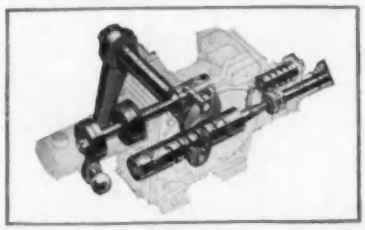
Throughout 50 years of exclusive steering service to the automotive industry, Ross gears have been distinguished for long life, simplicity of adjustment and maintenance of long-recognized qualities of steering *ease, safety, stability* and *performance.*

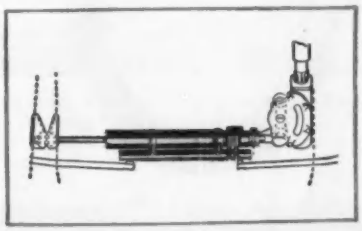
Ross invites discussion of any steering problem—manual or power.

ROSS GEAR AND TOOL COMPANY, INC. • LAFAYETTE, INDIANA

Ross STEERING





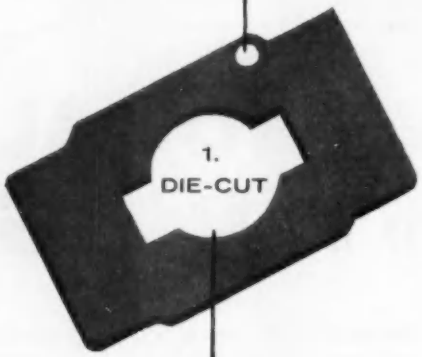


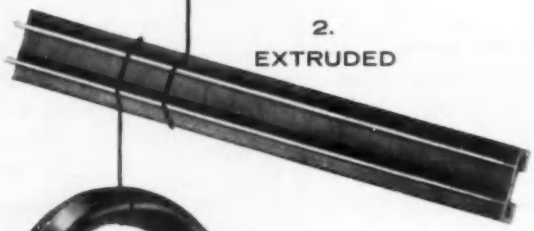
CAM & LEVER MANUAL . . . HYDRAPOWER INTEGRAL . . . HYDRAPOWER LINKAGE

ACADIA

MEETS YOUR SYNTHETIC RUBBER NEEDS

BEST OUT OF 3 WAYS!







And when there's another way to form synthetic rubber, you can be sure it will be available from Acadia!

Right now Acadia is precisely meeting all manner of rubber specifications. Very often Acadia helps users to find a better, less costly way.

For in addition to the complete choice of shape, size or method, Acadia offers its wide experience in developing special rubber properties. Here you get exactly the characteristics you want—*strength, compression-deflection, resistance to oil, age or what have you.* Here, too, is the remarkable Acadia SILICONE rubber that stays resilient at 100° *below zero,* or 500° above. It's available molded or extruded for gaskets, seals, "O" rings, washers, sheets, cut-parts and packings.

Would you like further information about Acadia synthetics for *your* product? A letter or postcard will bring an Acadia representative at your convenience.

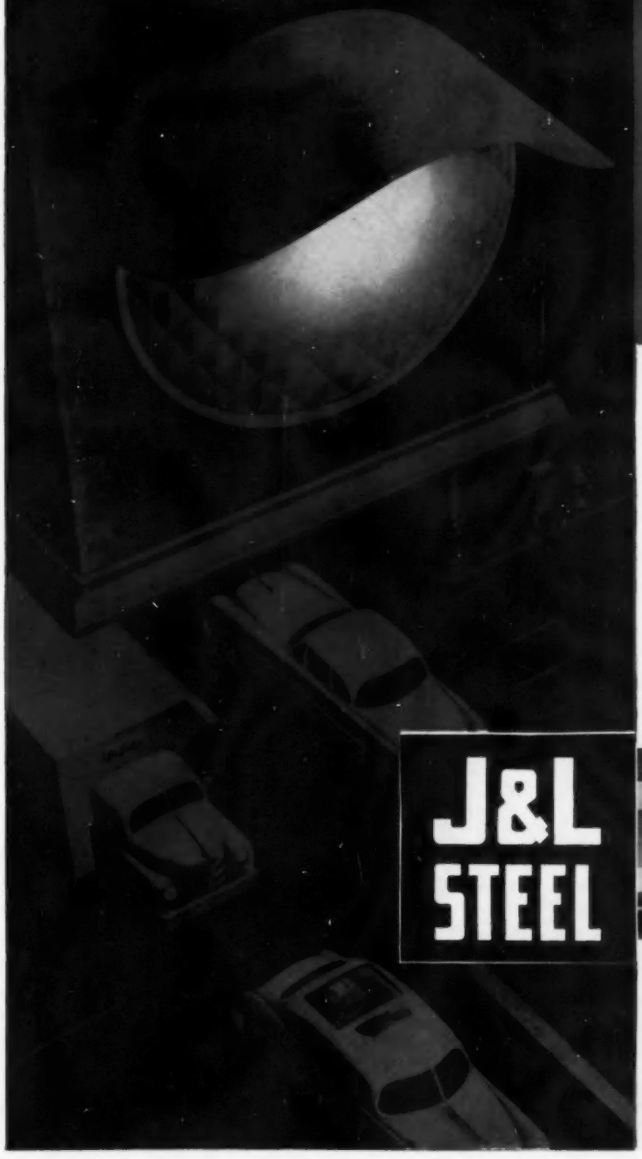
ACADIA *Synthetic* PRODUCTS

DIVISION OF WESTERN FELT WORKS
4021-4139 West Ogden Avenue, Chicago 23, Illinois
Branch Offices in Principal Cities

MANUFACTURERS AND CUTTERS OF WOOL FELT

start with

JALCASE



for better results use

the J&L cold finished steel

with a reputation for:

- easy, consistent machinability
- good heat-treating properties
- high cold-drawn physical properties
- wide range of applications

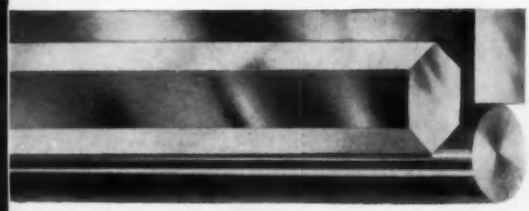
Jalcase was developed in J&L's metallurgical laboratories to meet the need for a free-cutting open-hearth steel with the mechanical properties required for high quality machined parts.

Today, specifications are standardized within the steel producing industry and S.A.E. and A.I.S.I. numbers have been assigned:

LOW CARBON GRADES		HIGH CARBON GRADES	
Jalcase Designation	A.I.S.I. Number	Jalcase Designation	A.I.S.I. Number
Jalcase—1	C-1113	Jalcase—7	C-1137
Jalcase—2	C-1114	Jalcase—8	C-1141
Jalcase—3	C-1116	Jalcase—9	C-1144
Jalcase—4	C-1117	Jalcase—10	C-1144 specially processed
Jalcase—5	C-1118		
Jalcase—6	C-1119		

And, J&L's Jalcase continues to maintain leadership in this group of steels.

J&L STEEL



When you specify "JALCASE," you can depend upon those qualities that help you obtain better production . . . longer tool life . . . lower overall costs. Remember to say "JALCASE" when you order.

Jones & Laughlin

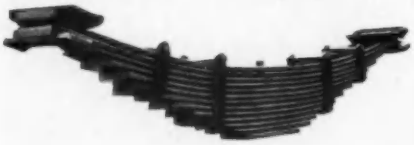
STEEL CORPORATION — *Pittsburgh*

Automotive Coil and Leaf Springs

FOR MOTOR CARS



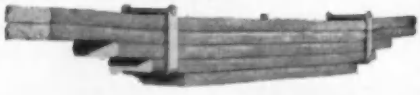
TRUCKS . . . BUSES



TRACTORS . . . TRAILERS

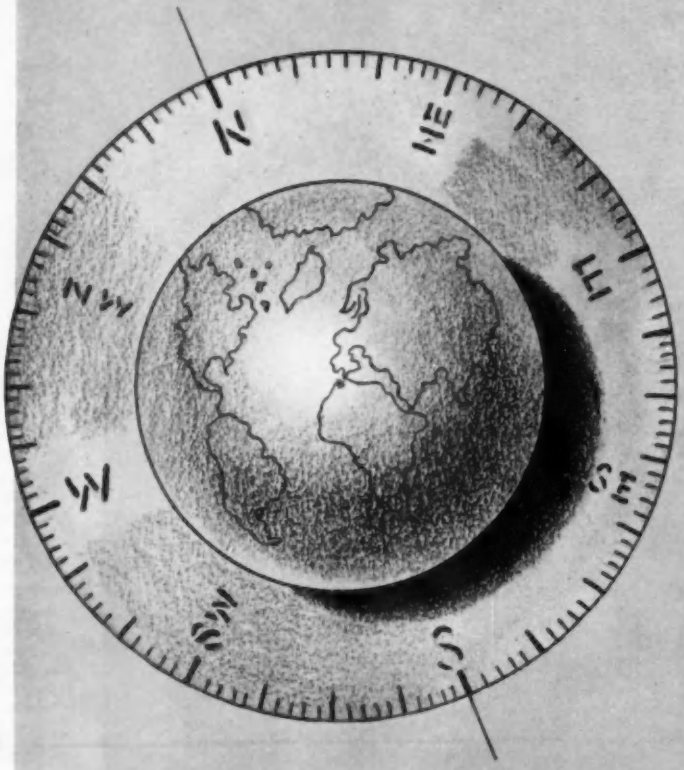


OFF HIGHWAY . . .



BURTON SPRINGS

. . . Vital Support to the Automotive Industry



All over the world, BURTON SPRINGS play a truly fundamental part in protecting both vehicles and their loads against the most extreme operating hazards . . . adding to the safety, comfort and dependability of motor transportation.

Trucks, buses, trailers, tractors, off highway equipment, and private motor cars of almost every prominent make use Burton Leaf or Coil springs as original equipment. Hundreds of difficult and unusual spring problems have yielded to the close cooperation of Burton engineers working side by side with the technical staffs of the World's foremost vehicle builders.

We invite you to contact us for a review of your spring requirements.

BURTON

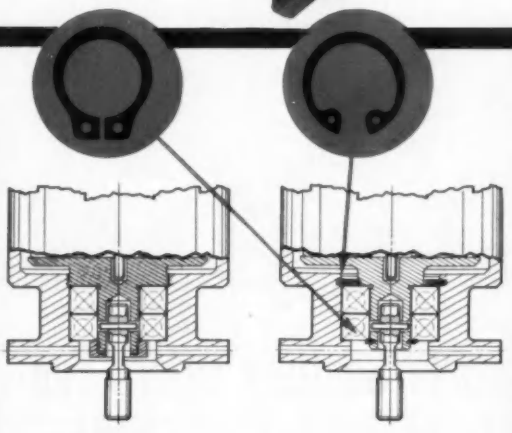
AUTO SPRING CORP.
Western Avenue at
Forty-eighth Street, Chicago 32

10 Waldes Truarc rings speed assembly— Eliminate parts and machining in precision control



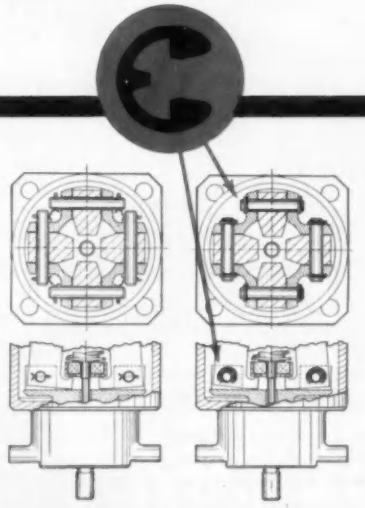
Kahn Rotary Speed Control

Kahn and Company, Inc., of Hartford, Conn., use a total of 10 Waldes Truarc Retaining Rings in this new mechanical-electric translator for automatic control of rotary speed. Truarc rings act as positioners and retainers to eliminate parts, simplify operations, save labor, and speed assembly.



Rotor Installation. **In the old way,** ball bearing was retained by a threaded shoulder and threaded bearing cup retainer.

New way, using two Truarc Rings (Series 5100 and 5000) eliminates 4 threading operations, bearing shoulder and threaded bearing cup. Assembly is quicker and easier, two ounces lighter.



Flyweight Assembly. **Formerly,** 2 holes had to be drilled in each of the 4 pivots, and 8 cotter pins were required.

The new way, using 8 Truarc E-Rings (Series 5133), replaces holes with grooves, reduces pivot size, leaves no projecting parts. Rings snap into place, speed assembly time by three minutes per unit.

Whatever you make, there's a Waldes Truarc Retaining Ring designed to improve your product... to save you material, machining and labor costs. They're quick and easy to assemble and disassemble, and they do a better job of holding parts together. Truarc rings are precision engineered and precision made, quality controlled from raw material to finished ring.

36 functionally different types... as many as 97 different sizes within a type... 5 metal specifications and 14 different finishes. Truarc rings are available from 90 stocking points throughout the U. S. A. and Canada.

More than 30 engineering-minded factory representatives and 700 field men are available to you on call. Send us your blueprints today... let our Truarc engineers help you solve design, assembly and production problems... without obligation.

For precision internal grooving and undercutting ... Waldes Truarc Grooving Tool!



WALDES TRUARC® RETAINING RINGS

Send for new catalog supplement

Waldes Kohinoor, Inc., 47-16 Austel Place, L. I. C. 1, N. Y.

Please send the new supplement No. 1 which brings Truarc Catalog RR 9-52 up to date.

(Please print)

Name.....

Title.....

Company.....

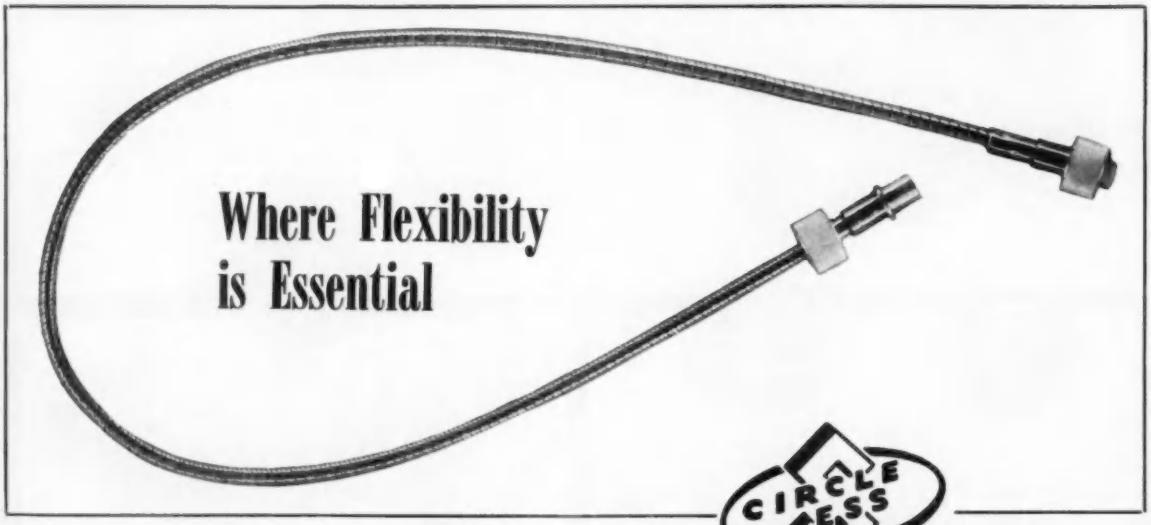
Business Address.....

City.....*Zone*.....*State*.....

AY 038

WALDES TRUARC Retaining Rings, Grooving Tools, Pliers, Applicators and Dispensers are protected by one or more of the following U. S. Patents: 2,382,948; 2,411,426; 2,411,761; 2,416,852; 2,420,921; 2,428,341; 2,439,785; 2,441,846; 2,455,165; 2,483,379; 2,483,380; 2,483,383; 2,487,802; 2,487,803; 2,491,306; 2,491,310; 2,509,081; 2,544,631; 2,546,616; 2,547,263; 2,558,704; 2,574,034; 2,577,319; 2,595,787. and other U. S. Patents pending. Equal patent protection established in foreign countries.

ECONOMY + PERFORMANCE



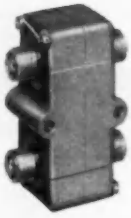
RIGHT ANGLE ADAPTER

To provide a connection for flexible shaft control where space limitations do not permit a conjunction without bending the shaft into too small a radius.



H TYPE ADAPTER

This adapter provides three outlets, which enables the running of three units from the same power source. Ball bearing construction enables this adapter to handle heavy loads.



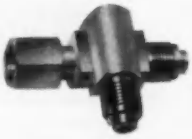
BALL BEARING RIGHT ANGLE ADAPTER

To provide a connection for flexible shaft control where a bend sharp enough to damage the shaft is required. Ball bearing construction enables the handling of heavier loads.



DUAL DRIVE ADAPTER

To drive more than one unit from the same power source and to provide two gear ratios from the same power source.



Flexible Shafting Offers You

Direct alignment in either remote control or power transmission.

Less working units needed in flexible shafting direct grouping.

Sturdier construction but lighter weight.

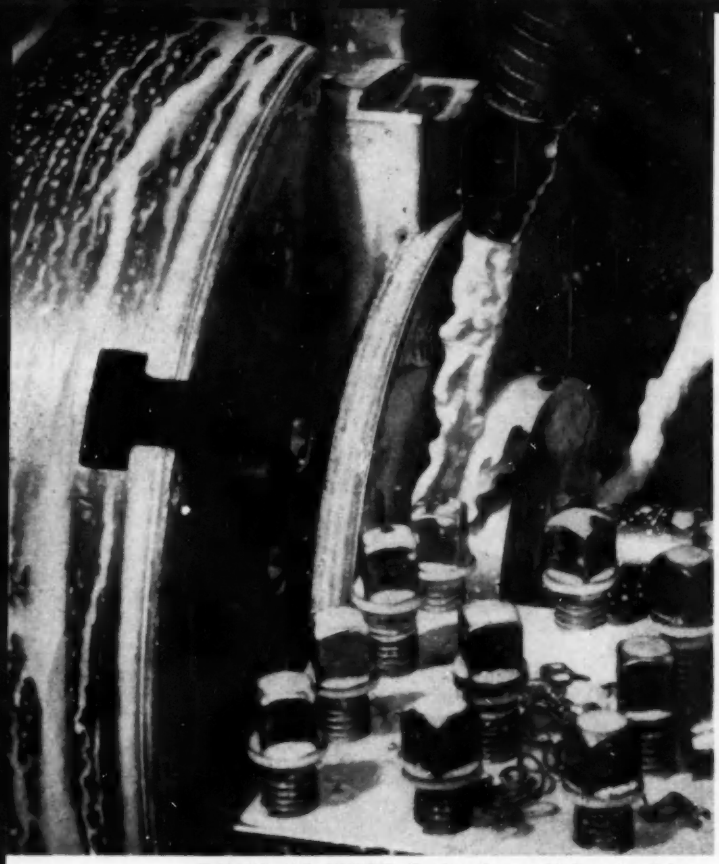
Write on your letterhead for our latest Flexible Shaft Manual.

F. W. STEWART CORP.

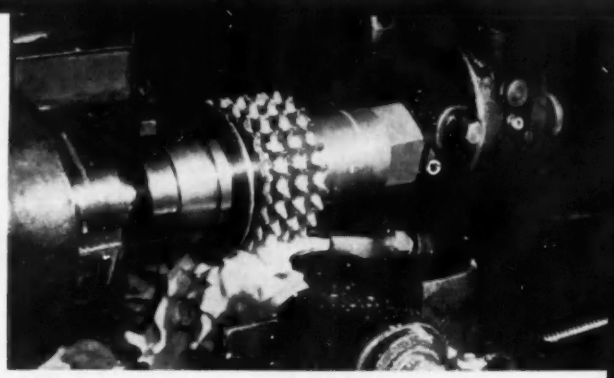
A Subsidiary of the S. S. White Dental Mfg. Co.

4311-13 RAVENSWOOD AVENUE · CHICAGO 13, ILLINOIS

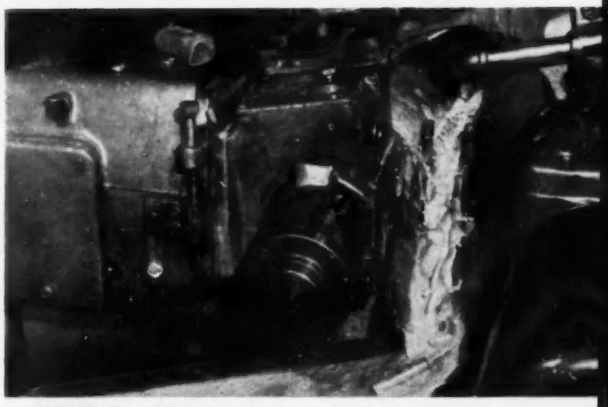
WEST COAST PLANT: 1638 So. FLOWER STREET · LOS ANGELES 15, CALIFORNIA



TURNING AND DRILLING. During the machining of a 9-in. piece using carbide-tipped tools, S.E.C.O. removes heat fast ...assures long runs, top speeds.

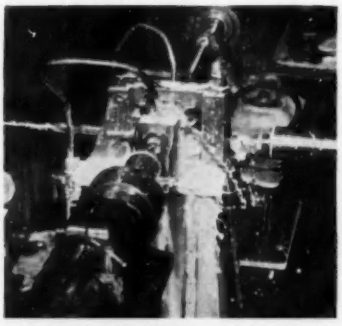


HOBBING. Flooding the cutting edges of a high-speed-steel hob working 1117 steel, S E C O. provides lubricity and cooling power needed for long tool life.



CENTERLESS GRINDING. In grinding 4320 H steel pins, S.E.C.O. keeps wheels clean. Grinding dirt drops out quickly...is not recirculated. Parts are rust-protected.

SUNOCO EMULSIFYING CUTTING OIL HANDLES 4 TOUGH JOBS...EASILY



DRILLING AND REAMING. On steel forgings with a 350/400 Brinell, S.E.C.O. keeps drills cool...gives clean cutting.

Whether you are shaping, hobbing, grinding, reaming, boring or milling, it will pay you to look into the advantages of SUNOCO EMULSIFYING CUTTING OIL.

Moderately priced, S.E.C.O. has been industry's most widely used soluble cutting oil for years. Higher-than-ever machining efficiency, increased detergency, easier mixing, and other added advantages are helping keep S.E.C.O. the leading emulsifying cutting oil in the country today.

For complete information about S.E.C.O. see your Sun representative. Address SUN OIL COMPANY, Philadelphia 3, Pa., Dept. AA-3.

INDUSTRIAL PRODUCTS DEPARTMENT

SUN OIL COMPANY

Philadelphia 3, Pa.

IN CANADA: SUN OIL COMPANY, LIMITED, TORONTO AND MONTREAL

SUNOCO

a Decade

OF UNITED SPECIALTIES COMPANY DEVELOPMENT

THE flood of new post-war products following 1945 brought radical changes in automotive designs. United's air cleaner division met this challenge with highly specialized air cleaner innovations, while also stepping up volume to well over two and a half times pre-war levels. In addition, in 1951 United expanded its horizons with the production of stainless steel television shells by the new spinning method, and is today one of the leading shell producers.

United's Mitchell division also ran head on into a tremendously expanded post-war demand for its products — particularly for new turn signal switches, which are now being manufactured in large numbers for cars and trucks. Today with added floor space and facilities, ignition switches, fabricated television parts, overhead door channels and automobile rolled shapes are being manufactured in increasing v

Another milestone in United's reflected in the acquisition ham, Alabama, plant. W modern facilities for man the South for the South, our operations are turning out b ers in quantity and a line of

During the past decade U manufacturer of automotive specialties, has kept abreast of the latest developments in the field ... as a pioneer in new fields it has exhibited the curiosity and alertness vital to a concern's continual advancement.

Complete range of metal shapes: cold rolled, drawn and pressed

Connected-type turn signal switch, flasher in self-cancelling

Geared to a work

CHICAGO

NEW IDEAS..

★ MODERN PRODUCTS For Modern Living

We of United Specialties Company are proud of our part during the past quarter of a century in the development and refinement of the internal combustion engine, the many applications of which have so mightily contributed to our modern American way of living.

United Oil Bath Air Cleaner protection over that period of time has consistently improved the performance and increased the life of engines on cars, trucks, busses, agricultural and industrial tractors and all types of Diesel and gasoline power units.

In safety of vehicle operation and driver convenience our Mitchell Division pioneers units such as semi-automatic directional signal switches and ignition switches. Other contributions to modern living, coming from our rolled shape department, consist of such products as automotive window frames, locomotive and railroad coach side panels, rolled material for lighting reflectors and pre-fabricated housing sections.

Such close contact with so many facets of industry induces a spirit of perpetual alertness. We are constantly looking ahead towards improvement of product, its design and production. This is both a habit and a "must".



CALL ON UNIT AND PRODUCT

Behind United Specialties Comp over a quarter century of experi the development and product automotive specialties with a cont

United Specialties Company

Pioneer and Pacemaker in Air Cleaners

Straight through from the early wood-spoked touring cart to the sleek, low-slung beetletops of today, United Air Cleaners have led in engine protection. Look at the pacemaking development:



FROM THE WAR



Mitchell clamp-on and screw-type, semi-automatic turn signal switch used in cars, trucks, buses.



This air cleaner protects diesel engines in truck, tractor and industrial power units.



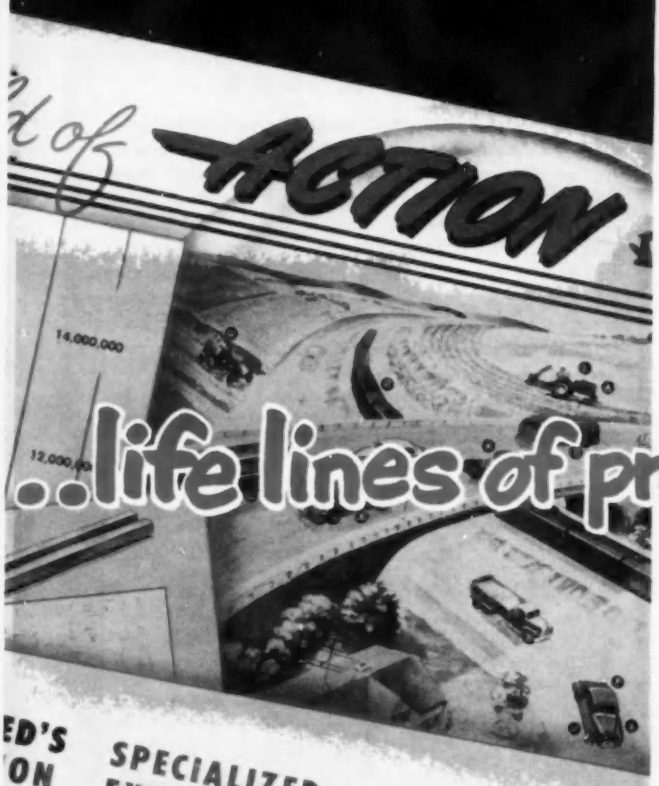
Gasoline engines used on combines and other agricultural implements are protected by this dual unit—a combination pre-cleaner and air cleaner for excessive dust conditions.



Plastic oil bath air cleaner for small engines. Cleaning action visible to user.



Popular-style truck air cleaner mounted directly on air horn of down draft carburetor.



..life lines of progress



For almost a third of a century — since United Specialties' rotor air cleaner appeared on the first Chrysler off the production lines some 30 years ago — United automotive specialties have kept pace with the fast-moving industry.

Over 20 million United cleaners — oil bath, dry type and others in 350 designs — have been produced to fit internal combustion engines for cars, trucks, buses, tractors, stationary power units.



United is meeting special design problems induced by today's streamlining trends. Raising fenders and lowering hoods puts a premium on under-the-hood space. The United rectangular air cleaner, recently developed, is the answer for large engines for trucks, tractors and industrial power units. For passenger car engines, the mushroom or hat-type cleaner, with curved air intake pipe, successfully solved a difficult engineering problem.

United's Mitchell division likewise has been serving the industry long and well. Its ignition switches, original equipment on popular-make cars and trucks, are precision-built units that will outlast the vehicles on which they are used. Of equal importance is Mitchell's development of directional signal switches. In addition, Mitchell makes a complete range of metal design and rolled shapes.

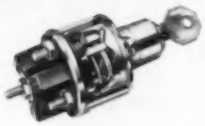
Like the automotive industry we serve, United has always maintained a spirit of forward-looking alertness. We are constantly looking ahead towards improvement of product, its design and production. It is a standard upon which our continued progress depends.

UNITED SPECIALTIES COMPANY

Chicago 28 • Philadelphia 36 • Birmingham 11



Come Better Products for Peace!



Conventional-type Mitchell ignition switch used on popular makes of cars and trucks.

This new air cleaner is designed for dual carburetors. A fixed fitting fastens over one carburetor intake — an eccentric fitting fastens over the other. This compensates for any variation in tolerances — provides a perfect fit.





Lapping For Precision Flatness and Parallelity in Production Quantities



...with a LAPMASTER

This is the machine for you if you want precision flatness in production quantities at low cost. Lapmasters readily lap to the extreme close tolerance of one light band (.0000116") or less. In addition they produce an extremely fine finish to as low as 1 RMS. They are available with 12", 24", 48", 72" or 84" lapping plates.

THIS IS HOW THE LAPMASTER WORKS

I, a heavy cast iron lap plate revolved slowly under power. **II,** large cast iron conditioning rings are held in position and rotate freely on the lap. **III,** work pieces are placed inside the conditioning ring where they also rotate on the lap. **IV,** a liquid vehicle containing fine loose abrasive flows on the lap plate and is uniformly distributed under the work pieces. At the same time the rotating conditioning rings preserve the flatness of the lap plate. These three essential features, combined with the rapid cutting action of loose abrasive produces a flatness which meets every production requirement.



1 Operator requires no previous lapping experience.



2 Lapping with loose abrasive and without excessive pressure eliminates heat and subsequent distortion.



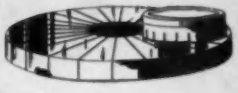
3 Simplicity of design provides accessibility and allows ease of loading and unloading.



4 Loose abrasive distributed evenly over lapping area insured uniform results.



5 Precision laps identical parts in one cycle or parts of various shapes, heights and materials in one cycle.



6 Lap plate always kept in condition while in operation. No down time required for truing or reconditioning.

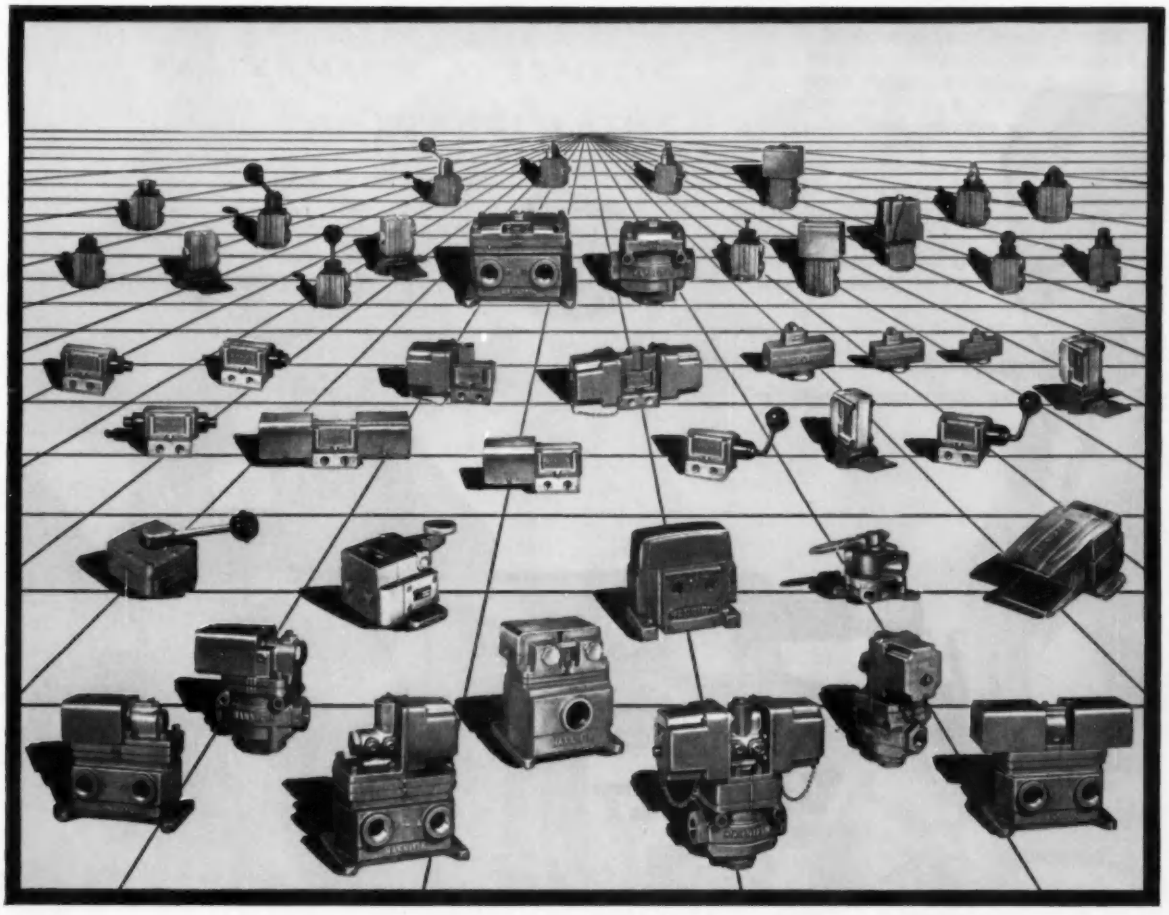


Learn more about the possibilities of production lapping and the interesting subject of measuring flatness. The illustrated fact-filled booklets are yours for the asking. Write today.

CRANE PACKING COMPANY
6435 Oakton Street, Morton Grove, Ill.
(Chicago Suburb). In Canada: Crane Packing Company Ltd., Hamilton, Ont.

CRANE PACKING COMPANY 38 YEARS INDUSTRIAL PROGRESS

FOR AIR CYLINDER CONTROL... Manual or Electric



Hannifin is your best valve source

What air control valves do you need, or prefer? Hannifin has all types—for your production lines or the machines you manufacture. They include:

P-M Pilot-Master Valves, solenoid controlled by integral pilot heads (including new-type, dust-tight, splashproof heads that completely meet J.I.C. recommendations). ⅜" to 1¼". 2-way, 3-way and 4-way.

P-M Master Valves. ¾" to 1¼". 2-way, 3-way and 4-way, air operated. For remote control from a wide choice of P-M Pilot Valves.

P-M Direct-Operated Valves. For direct control of small air cylinders. 2-way, 3-way and 4-way. ¼" and ⅜".

Disc Valves. Rotary and sliding reciprocating disc types for hand, foot or electric operation. ⅛" to ¾".

Micrometric Speed Control Valves for micrometer-like speed adjustment through control of exhaust flow.

You can simplify your air control problems by standardizing on Hannifin.

Stock Delivery On All Types

HANNIFIN

MAIL THE COUPON FOR PROMPT ACTION

- ☐ Have Field Engineer call at once
- ☐ Have Field Engineer stop by soon
- ☐ For the present, just send complete Hannifin Control Valves Catalog



Hannifin Corporation, 543 S. Wolf Rd., Des Plaines, Illinois

Name.....*Title*.....

Company.....

Address.....

City.....*Zone*.....*State*.....


TISHOLT

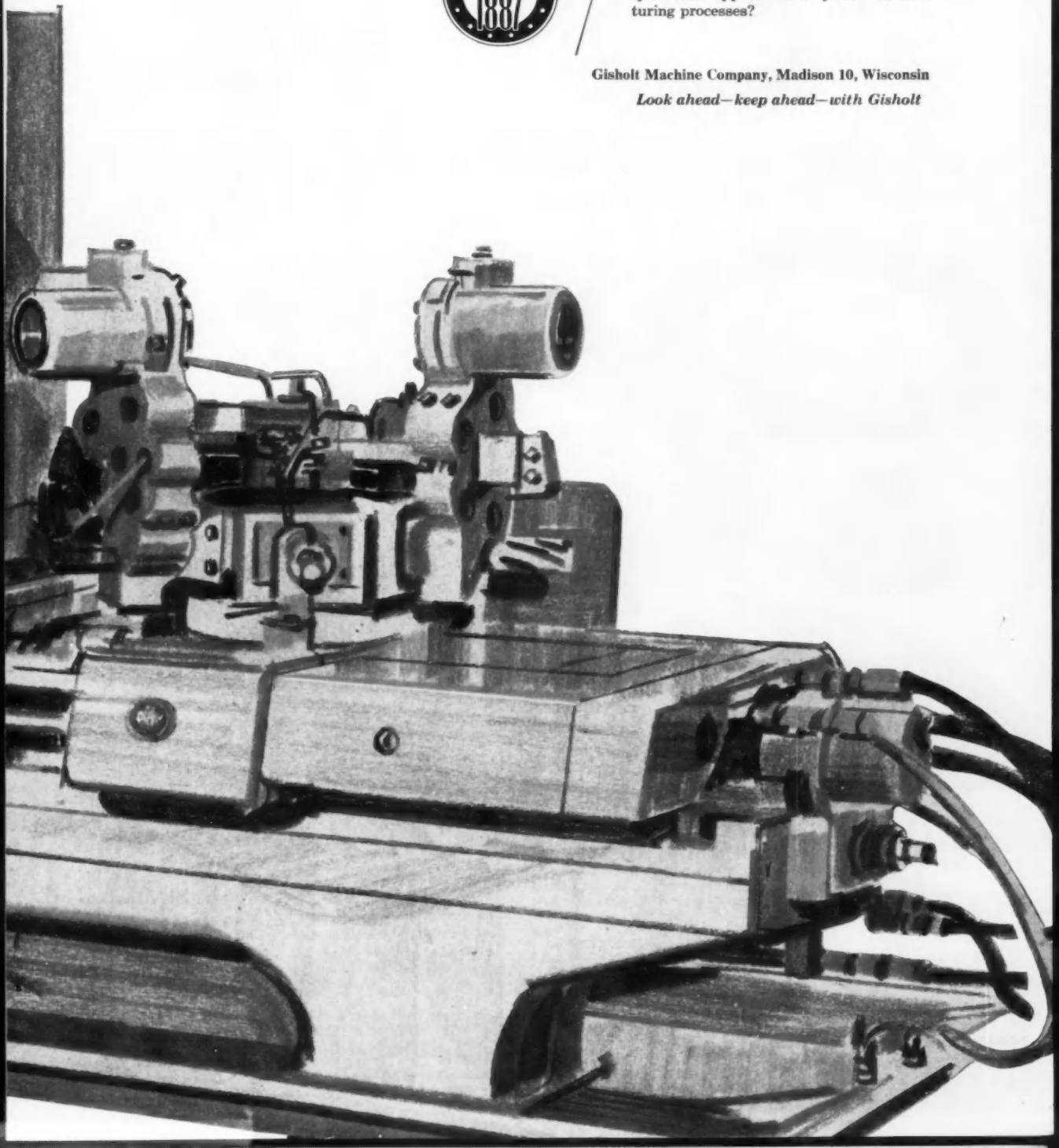
GISHOLT MASTERLINE FASTERMATIC AUTOMATIC TURRET LATHE

MASTERLINE GISHOLT SINCE 1887

This latest design Gisholt MASTERLINE Fastermatic Automatic Turret Lathe offers many outstanding features which give you faster, easier operation, higher quality work, quicker setup and lower maintenance. In short, this machine will do your work faster and better at less cost —and with a new minimum requirement for operator skill, effort and attention. May we give you more facts about its profitable application to your manufacturing processes?

Gisholt Machine Company, Madison 10, Wisconsin

Look ahead—keep ahead—with Gisholt



HOW R/M PRECISION MOLDED

R/M
FIRST IN FRICTION

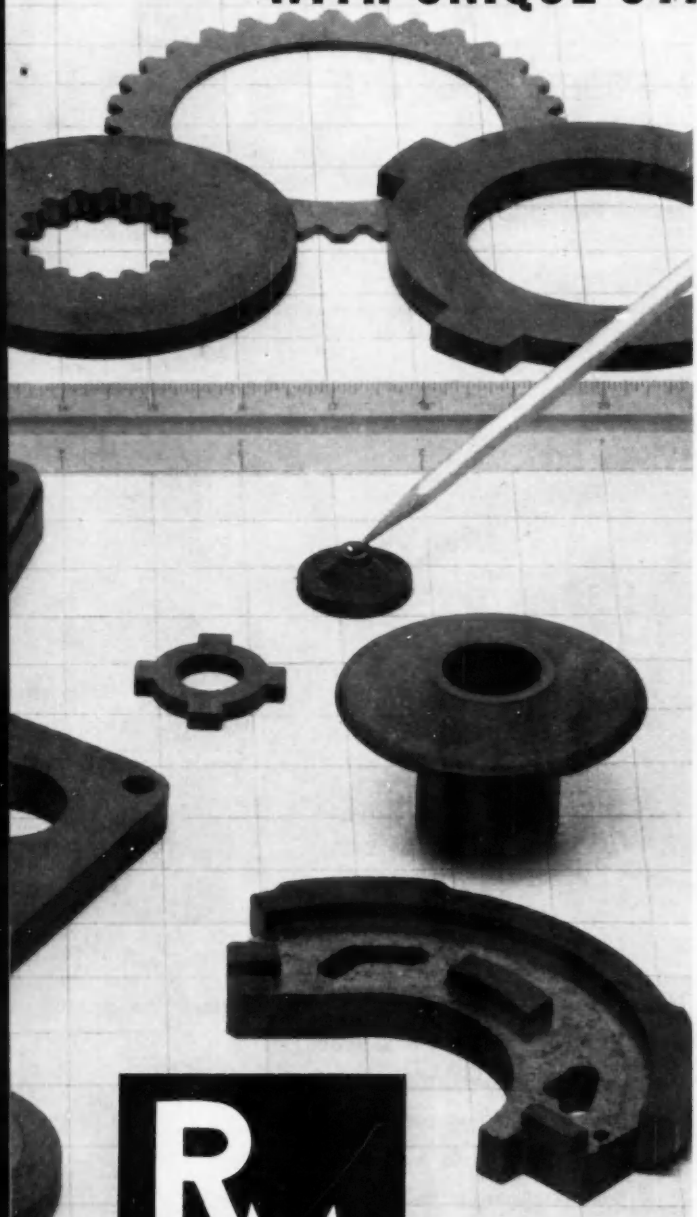


These are just a few of the precision molded products manufactured by Raybestos-Manhattan. Any part needed in large quantities, and requiring machining in its normal production which can be eliminated by molding to shape without too expensive die costs, makes an ideal application for R/M Precision Molding.

THE RECORD OF "FIRSTS" IN FRICTION MATERIAL DEVELOPMENT SHOWS WHY R/M IS FIRST IN FRICTION

FIRST Woven Brake Lining • FIRST Asbestos Brake Lining • FIRST Ground Wearing Surface • FIRST Zinc Alloy Wire Brake Lining • FIRST Pre-Treated Yarns • FIRST Extruded Pulp Brake Lining • FIRST Flexible Pulp Brake Lining in Rolls • FIRST Dry Process Brake Lining • FIRST Semi-Metallic Brake Lining • FIRST Bonded-to-Metal Brake Lining • FIRST Woven Clutch Facings • FIRST Molded Asbestos Clutch Facings for Clutches Operating in Oil FIRST Endless Woven Clutch Facings • FIRST Pre-Treated Clutch Facings • FIRST Bonded-to-Metal Clutch Facings

PRODUCTS SET THE PACE IN FRICTION MATERIALS WITH UNIQUE STRUCTURAL STRENGTH



PRECISION MOLDING is a mass-production method developed by R/M engineers for economically manufacturing asbestos, with binders and fillers, into finished parts for structural and friction applications to accurate dimensions. Depending on quantity, size and shape, parts produced by this process not only cost less, because machining is reduced or eliminated, but frequently give better performance as well.

R/M precision molded parts are made of materials with high heat stability—in contrast to usual plastic materials, which are thermoplastic. They can be designed with specific impact, tensile, compressive and flexural strengths, as well as a broad range of frictional properties. They are now being used for a wide variety of applications in the automotive, household appliance, industrial and other fields.

Carburetor insulator gaskets having low thermal conductivity, high resistance to oil and gasoline, and stability at temperatures up to 500°F., are in wide use in the automotive field. R/M precision molded parts are uniform in weight—and long wearing. They operate smoothly and quietly at high peripheral speeds. These characteristics adapt them for use in centrifugal clutches for fractional horsepower motors. R/M precision molded parts available in compounds with "engineered" properties are ideal for applications ranging from the above to vibration dampeners, components for control mechanisms, overriding clutches and snubbers, and many other applications where relatively low energy absorption is involved.

R/M Works with All Types of Friction Materials

Precision molded parts are, of course, but one of the many types of products produced by Raybestos-Manhattan. R/M has been the world's largest maker of friction materials for over 50 years. And unlike other manufacturers, R/M works with *all kinds* of friction materials—from woven and molded asbestos to cork-cellulose, semi-metallic and sintered metals.

This is important to you. For it means that when you consult an R/M engineer, you can count on completely unbiased advice as to exactly which friction materials are best for your particular application.

Whether you require precision molded products or any other kind of friction part, it will pay you to talk to R/M now. Raybestos-Manhattan is continually working in advance of today's needs . . . to produce friction materials with still greater output and durability. And the full depth and breadth of R/M experience—the complete facilities of R/M's seven great plants with their research and testing laboratories—are available to work out a practical and profitable solution to any friction problem you may face.

R/M
FIRST IN FRICTION

THE TRADE-MARK THAT SPELLS PROGRESS IN FRICTION MATERIAL DEVELOPMENT

New R/M Bulletin No. 550 contains complete design and engineering data on Precision Molded Products. Write for your copy. For technical information on all other R/M friction materials, ask for Bulletin No. 500.



RAYBESTOS-MANHATTAN, INC.

EQUIPMENT SALES DIVISION: 6010 Northwest Highway, Chicago 31, Ill. · Detroit 2 · Cleveland 14 · Los Angeles 58

FACTORIES: Bridgeport, Conn.; Manheim, Pa.; Passaic, N.J.; No. Charleston, S.C.; Crawfordsville, Ind.; Neenah, Wis.
Raybestos-Manhattan (Canada) Limited, Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Industrial Rubber, Engineered Plastic & Sintered Metal Products • Rubber Covered Equipment • Asbestos Textiles • Laundry Pads & Covers • Packings • Abrasive & Diamond Wheels • Bowling Balls

a NEW automatic high-speed hobbing machine...



The Barber-Colman No. 3-6 Vertical Hobbing Machine is a single-purpose machine designed and built to meet the requirements of a specific job. The machine has standard basic elements, but the tooling, loading, gaging and handling are designed for maximum production of a specific part. Its high-speed operation makes it adaptable to all mass produced parts up to 3" diameter by 6" face width. Maximum pitch capacity is 10 DP. Hob speeds for carbide hobbing of non-ferrous and non-metallic blanks are available. Features which contribute to the high-speed operation of this machine include exceptionally large heat-treated and ground bed ways, short drives to the work and hob spindles, and a hardened and ground multiple-thread index worm.

BUILDERS OF PRECISION GEAR

BARBER • COLMAN

No. 3-6

for high production gear cutting with automatic handling, loading and gaging

automatic loading	Blanks are automatically loaded from a vibratory hopper loading device. However, the type and variety of loading and handling devices with which this machine can be equipped are almost unlimited. Loading can be by magazine or conveyor when required.
automatic gaging	The gaging mechanism segregates gears of the correct size from those that are oversize or undersize. Size inspection is made by measuring over balls. If a pre-determined percentage of gears are out of tolerance, the machine can be made to stop automatically. The gaging unit can be furnished to inspect almost any elements of the gear.
automatic hob shifter	The automatic hob shifter can be set to shift a certain amount after each cycle, or it can be arranged to shift after a certain number of parts have been cut. Shifting increments can be changed easily by means of a graduated dial. The hob slide is clamped pneumatically.
centerdistance adjustment	The hob is set to the proper depth by means of a centerdistance adjusting mechanism, eliminating the usual time-consuming method of setting the hob to depth. The hob is placed in a fixture, and an indicator finger is set against the outside diameter. The indicator is calibrated to show the centerdistance between the work and the hob. This centerdistance setting is made by means of a graduated dial on the machine.

Some basic machine facts:

- Short, Compact Drives to Work and Hob Spindles
- Anti-Friction Work and Hob Spindle Bearings—Tapered Roller Type
- Pneumatic Work Clamping
- Self-Contained Lubrication and Coolant Supply
- Heat-Treated and Ground Bed V-Ways
- 2 HP, 1800 RPM Drive Motor
- Unitized Construction

HOBS • CUTTERS • REAMERS
HOBBING MACHINES
HOB SHARPENING MACHINES

BARBER COLMAN

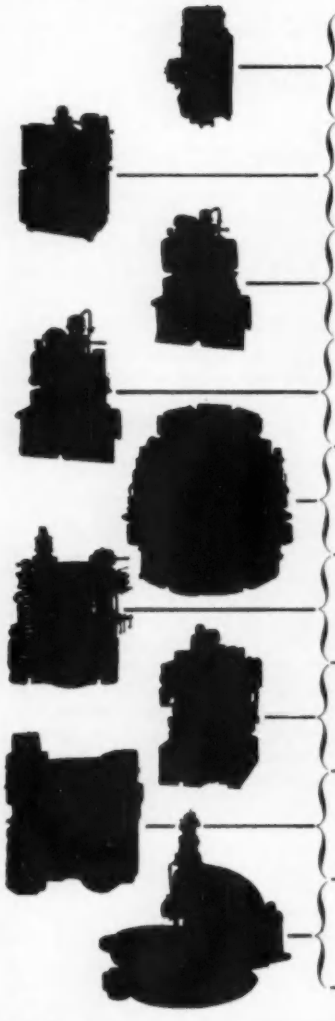
Barber-Colman Company

GENERAL OFFICES AND PLANT, 663 ROCK STREET, ROCKFORD, ILL.

HOBS AND MACHINES SINCE 1911

GEAR SHAPERS

FROM 1/16" TO 120" CAPACITY



SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. STROKES PER MIN.
		3" FINE-PITCH			
both	yes	3 inches	40 steel, 30 brass	3/4" ext.	2000
		No. 4GS			
both	yes	6 inches	5/7 spur, 6 hel.	2"	635
		7-TYPE*			
both	yes	7" spur, 6 1/2" hel.	6 spur, 6/8 hel.	1 1/2" ext., 1" int.	450
		7A-TYPE			
both	yes	7" spur, 7" hel.	5/7 spur, 6 hel.	2" ext., 2" int.	450
		No. 10 ROTARY			
both	yes	12 inches	3/4 spur, 5/7 hel.	3" ext., 3" int.	500
		6A-TYPE			
both	yes	18 inches	3/4 spur, 5/7 hel.	5" ext., 3" int.	300
		No. 12GS			
both	yes	12 inches	3/4 spur, 5/7 hel.	4" ext., 4" int.	550
		36-TYPE			
both	yes	36 inches	3 spur, 4/5 hel.	6" ext., 6" int.	300
		120-INCH			
both	yes	120 inches	2 spur, 4 hel.	8" ext., 8" int.	148

*Max. P.D. internal—5 1/2"

In addition to the machines listed above, Fellows builds special-purpose equipment for production of gears and related items. Descriptive literature, as well as specific technical data and price information, will be gladly supplied by your Fellows Representative. WRITE, WIRE or PHONE any Fellows Office!

Fellows

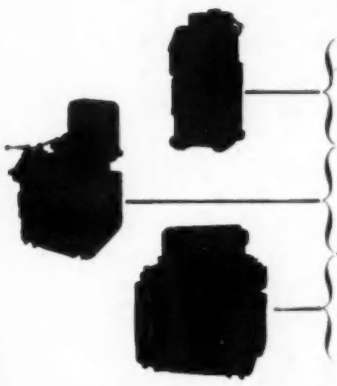
THE FELLOWS GEAR SHAPER COMPANY, 78 River St., Springfield, Vermont

Branch Offices: 319 Fisher Bldg., Detroit 2, Michigan • 5835 West North Ave., Chicago 39, Illinois
2206 Empire State Bldg., New York 1, N. Y. • 6214 West Manchester Ave., Los Angeles 45, California

THE PRECISION LINE

Gear Production Equipment

SHAVING MACHINES



SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER	MAX. DIAMETRAL PITCH	MAX. FACE WIDTH	MAX. SPREAD OF CENTERS
		No. 4 FINE-PITCH			
both	ext. only	4 inches	20	1 inch	12 inches
		No. 8 "FULL-TOOL"			
both	yes	8 inches	4	2 1/2 inches	**
		No. 11 INTERNAL			
both	int. only	***	6	1 1/2" up to 10p; 1", 12 to 16p	***

Also 12", 18" and 24" machines for externals only.

**Depends upon work-holding fixture

***Depends upon design of gear

INSPECTION INSTRUMENTS



	SPUR AND HELICAL	EXTERNAL & INTERNAL	MAX. PITCH DIAMETER
FOR COMPOSITE CHECK	**No. 4 FINE-PITCH RED LINER**		
	both	yes	4 inches
	No. 8M RED LINER		
	both	yes	***
	No. 20M RED LINER		
	both	yes	18 inches
INVOLUTE PROFILE CHECK	**No. 12M INVOLUTE MEASURING**		
	both	yes	12 inches
CHECKING LEAD CROWN & TAPER	**No. 12H LEAD MEASURING**		
	both	yes	12 inches

Nos. 24M Involute and 24H Lead Measuring Instruments with capacity of 24 inches

***Depends upon design of gear

Fellows Injection Molding Machines

These high-speed, fully automatic injection molding machines provide the ultimate in temperature control, easy clamping, safety and other money-making advantages.



MODEL 6-200 available with "Pre-Pack and Pre-Position" device provides up to full 8-ounce shots...dry-run speeds to 650 c.p.h....takes 12" x 24" molds horizontal, 15" x 21" vertical, 8" x 14" thick.

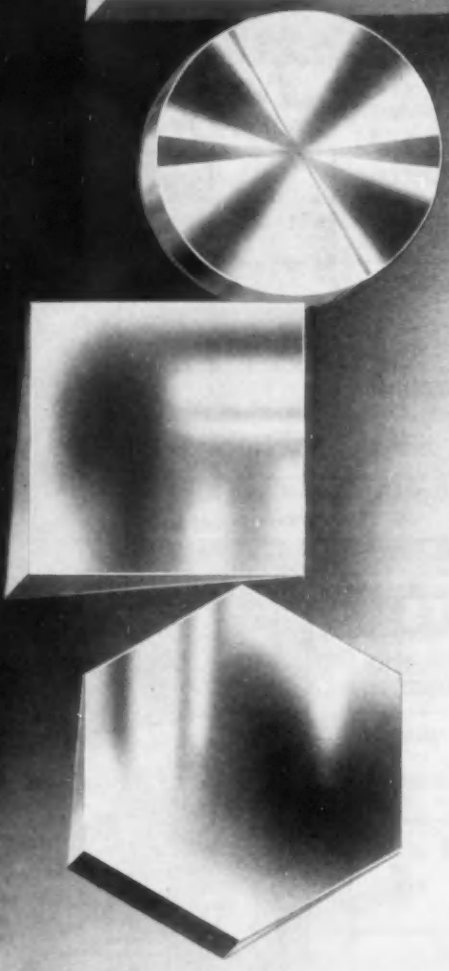


MODEL 1B-3-15 delivers up to 10 shots per minute....45 pounds per hour plasticizing capacity...20,000 p.s.i. injection pressure for pin-point gating.

LUSTERIZED*

TRADE-MARK REGD.

FINISH



This new brighter Cold Drawn Finish now available from Bliss & Laughlin in all:

ROUNDS • SQUARES
FLATS • HEXAGONS

IN STANDARD GRADES AND SIZES

CARBON AND ALLOY BARS
LEDLOY—LEADED STEELS

PRODUCED
only by Bliss & Laughlin at all Four Plants

DISTRIBUTED
through warehouse stocks —coast to coast

On Your Next Order, Specify
LUSTERIZED FINISH
Cold Drawn Bar Steels

*PAT. APPLIED FOR

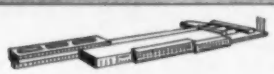


BLISS & LAUGHLIN, INC.

GENERAL OFFICES: HARVEY, ILLINOIS

SALES OFFICES
IN ALL PRINCIPAL CITIES

FOUR PLANTS:—



HARVEY, ILL.



DETROIT, MICH.



BUFFALO, N. Y.



MANSFIELD, MASS.


Announcing
FASTEX
DIVISION OF ILLINOIS TOOL WORKS
Now, bring your special stamping and plastic fastening problems to FASTEX, the new division of Illinois Tool Works. Here in one organization, you find a new service . . . the consolidation of the design and production of engineered stampings and plastic products formerly a part of the SHAKEPROOF Division. FASTEX is staffed with experienced engineers and skilled craftsmen, equipped with specialized facilities and organized to give you maximum flexibility and speed in design and production. FASTEX products are backed by the broad experience of the most famous name in fastenings... SHAKEPROOF. Fastex Division, Illinois Tool Works, 195 Algonquin Road, Des Plaines, Illinois.
new ideas in metal stampings and molded plastic parts
Information about the new FASTEX Division is contained in a new FASTEX Bulletin. Send for it today.
FASTEX
SHAKEPROOF
DIVISIONS OF ILLINOIS TOOL WORKS
World's Broadest Line of Mass-Assembly Fastenings

W. F. & JOHN BARNES

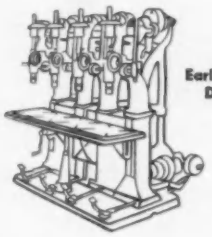
1872 - 1956

FROM



Foot Powered Scroll Saw

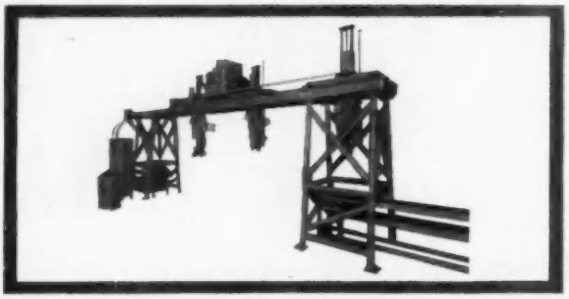


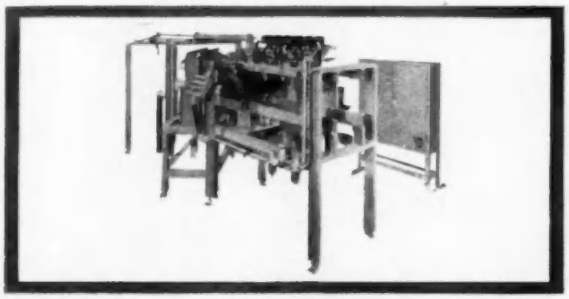


Early Gang Driller

● It was back in 1872 when the ox cart was still used for transporting goods and Edison was still experimenting with the electric light, that W. F. & John Barnes built their first industrial machine — a Foot Powered Scroll Saw. Later in the 1880's, the first Gang Drilling Machine was designed and built. This forerunner of the modern machine tools of today was shipped by ox team to a customer in a nearby town. Three days later, the records say, it arrived at its destination — a distance of 40 miles.

It is also a matter of record that all through these years, from oxen to jets, machines bearing the W. F. & John Barnes' name have been consistently associated with progressive developments and improvements in manufacturing methods. As a result, when you specify a Barnes' built machine today, you get a creative engineering and building service that is seasoned by experience — one that is complete and geared to serve your needs better than ever before.





▲ **SPECIAL CONVEYORS** — typical of variety of units designed and built from standard components to increase material handling efficiency between machining operations. Engineered to meet individual job requirements.

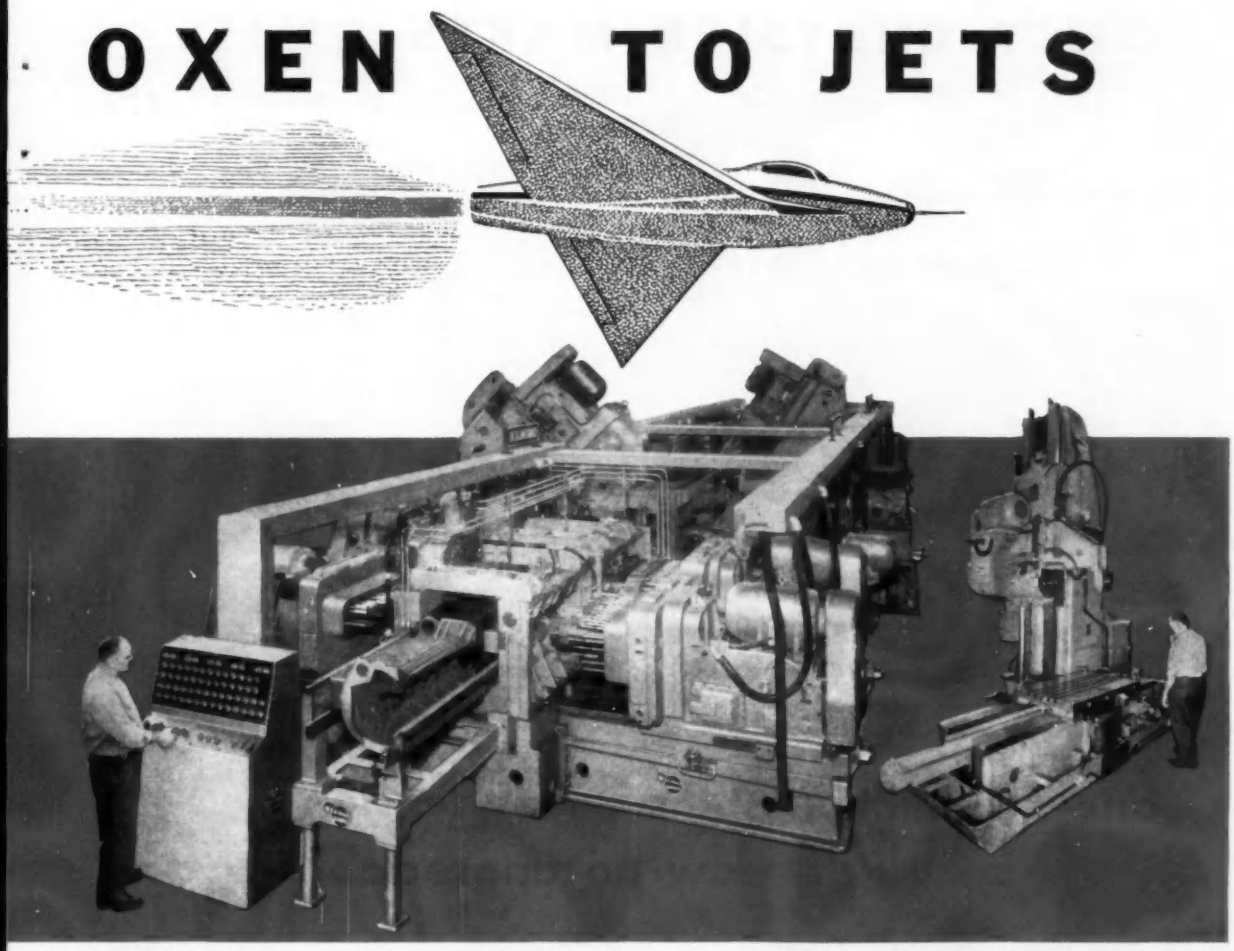
▲ **SPECIAL AUTOMATION EQUIPMENT**—includes a range of turn mechanisms, (illustrated), special transfer and unloading equipment, inspection, and assembly machines, designed for automatic or semi-automatic production-line operations.

W. F. & JOHN BARNES

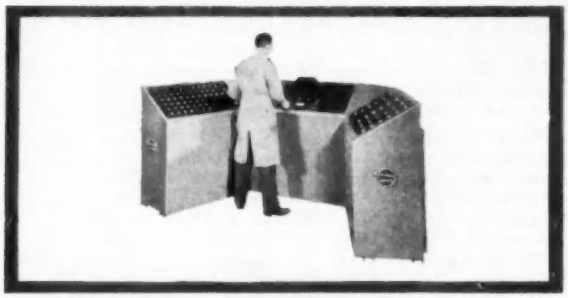
BUILDERS OF BETTER MACHINES SINCE 1872

MULTIPLE SPINDLE DRILLING • BORING • TAPPING

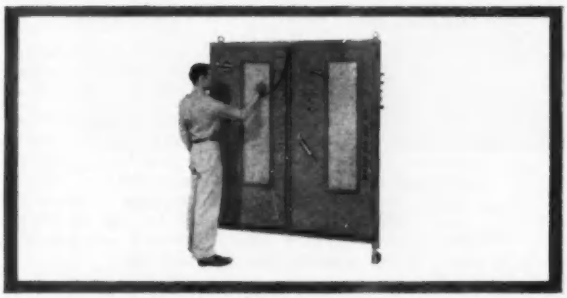
OXEN TO JETS



MODERN MACHINE TOOLS — units illustrated are typical of the large Progress-Thru and Single Station units designed and built by Barnes. 11-Station unit at left was designed to machine both 4 and 6-cylinder tractor engine blocks at 25 pieces per hour. Single-spindle machine at right slab and face mills motor frame mounting pads at 6½ pieces per hour.



SPECIAL ELECTRICAL CONTROLS — a typical Barnes unitized control system of the sequence type. All are designed to assure the most dependable service and are built to best serve your specific needs.



ELECTRO-GRAPHIC DETECTOR SYSTEMS — a new, exclusive Barnes development. Cuts maintenance time on complex electrical controls up to 90%. Wired-in checking system pin-points malfunctioning elements.

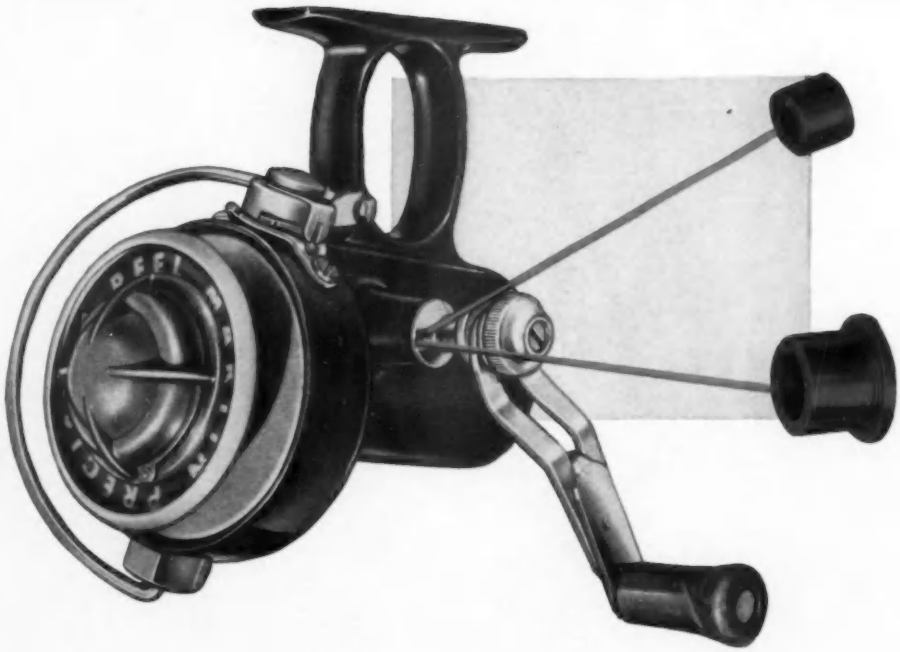
Write **FOR FREE LITERATURE** — New 8-page brochure illustrates and describes Barnes' expanded facilities . . . outlines 6-Point Coordinated Machine Tool Designing and Building Service.



W. F. & JOHN BARNES COMPANY • 403 SOUTH WATER ST., ROCKFORD, ILLINOIS

MACHINES • AUTOMATIC PROGRESS-THRU AND TRANSFER TYPE MACHINES

ONLY CHRYSLER MAKES OILITE®



one-half million spins under tension and— OILITE bearings show no appreciable wear

Here's a fishing reel that is subjected to laboratory tests far more drastic than it receives from anglers —*and the self-lubricating OILITE bearings take it in stride.* Here's what the spinning reel manufacturer reports:

"Last summer we had one stock reel tested under tension (up to and including four pounds) at varying speeds. This reel had your bearings, of course.

"Our original intention was to give the reel a breakdown test. However, after running the reel under tension 186,727 revolutions of the crank handle, actually revolving the head over half a million times, we found that the bearings showed no appreciable wear. *In fact, your bearings appeared only slightly worn in. This is a terrific recommendation, in our opinion, for your bearings.*"

The impregnated oil in self-lubricating OILITE bearings is held in storage by capillary attraction and provides a surface film for positive, constant lubrication. OILITE bearings are particularly successful in trouble areas where it is difficult or impossible to provide lubrication. The built-in oil cushion absorbs heavy shocks and stresses.

Chrysler engineered OILITE bearings are made of various metals and alloys in a wide range of sizes for a multitude of uses. Standard bearings and bearing material (cored, bar and plate stock) are available from local dealers throughout the U.S. and Canada.

Contact Amplex for help with your bearing problems. The engineering facilities of Chrysler-Amplex are available to serve you. OILITE Field Engineers, Supply Depots and Dealers in all principal cities. Overseas distribution thru Chrysler Export.

Chrysler-Amplex also manufactures Permanent Metal Filters, Finished Machine Parts and Friction Units.

OILITE . . . *In Powder Metallurgy . . . It's Amplex*

CHRYSLER CORPORATION
AMPLEX DIVISION
Dept. J-3, Detroit 31, Michigan

IT'S NEW! IT'S FREE!
First complete information on self-lubricating bearings, finished machine parts, filters and other powder metal units. 52 pages. Write today for OILITE Engineering Manual E-55.



Put Young Engineering Talent to work for you!

Young Quality®

YOUNG Radiators are used wherever the going is tough



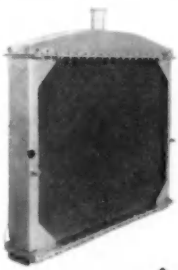
Cast Tank Radiators • Fine grain high strength, reinforced castings—one piece or sectional core construction.



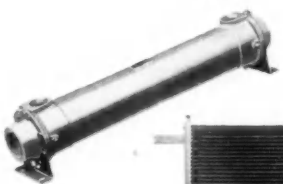
Stamped Tank and Side Member Radiators • Fully soldered, double lockseam tubes, double-grip, two-way headers.



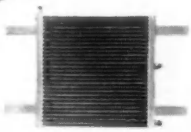
Diesel Locomotive Cab Utility Heaters • Feature concealed piping, fresh air inlet, floor level outlet, fully enclosed motor.



Steel Tank and Side Member "Mono-Weld" Heavy Duty Radiators • Welded top and bottom tank and side member construction.



Shell and Tube Heat Exchangers • Lightweight and compact; complete line of fixed and removable tube bundle units.



Liquid and Air-Cooled Torque Converter Coolers • Efficient cooling for a wide variety of mobile and stationary types of power equipment.

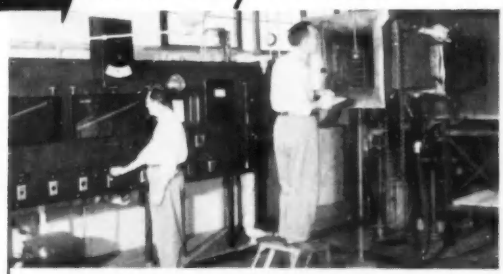
other Young products

- Central station and Room Air Conditioning
- Unit Heaters
- Convector-Radiators
- Heating and Cooling Coils



Write for Free Catalog

in Development



From the simple exchange of ideas . . . from the first rough sketches . . . Young carries through . . . in design and complete development of products to solve any type of heat transfer problem. Put the Young organization's 29 years of *specialized experience* to work for you.

in Manufacturing



Not only does Young have the engineering and development talent, but also the manufacturing "know-how" to fabricate products of unequalled quality. Solving heat transfer problems is what Young does best because it is the Company's very reason for being. You, too, can harness the power of Young engineering talent. Write, wire or call Dept. 106C.

Young RADIATOR COMPANY

RACINE, WISCONSIN

Creative HEAT TRANSFER ENGINEERS FOR INDUSTRY

Heat Transfer Products for Automotive, Aviation and Industrial Applications. Heating, Cooling, Air Conditioning Products for Home and Industry.

Executive Office: Racine, Wisconsin, Plants at Racine, Wisconsin, Mattoon, Illinois

new Danly Presses doubled

FOR A LEADING



Individual Press Production Jumps From 100,000 to 230,000 Laminations Per Day

Not only did this leading motor manufacturer double lamination production by switching to new Danly Autofeed Presses, but the additional benefits of much longer die life and greatly reduced maintenance provided exceptional cost savings as well. With the installation of new Danly presses, carbide dies were made practical in this operation for the first time. Danly's extra-rugged, extra-precise construction assures these dies a life expectancy of nearly three years — 200,000,000 pieces.

Maintenance records were set, too. Since installation, five Danly Presses have produced more than a quarter-billion lamina without downtime other than for die design changes and routine maintenance. Further, only 20% of the time formerly needed to keep dies in shape is now required. At the same time, each die is working harder, producing more than twice as many parts per day in the new Danly Autofeed Presses.

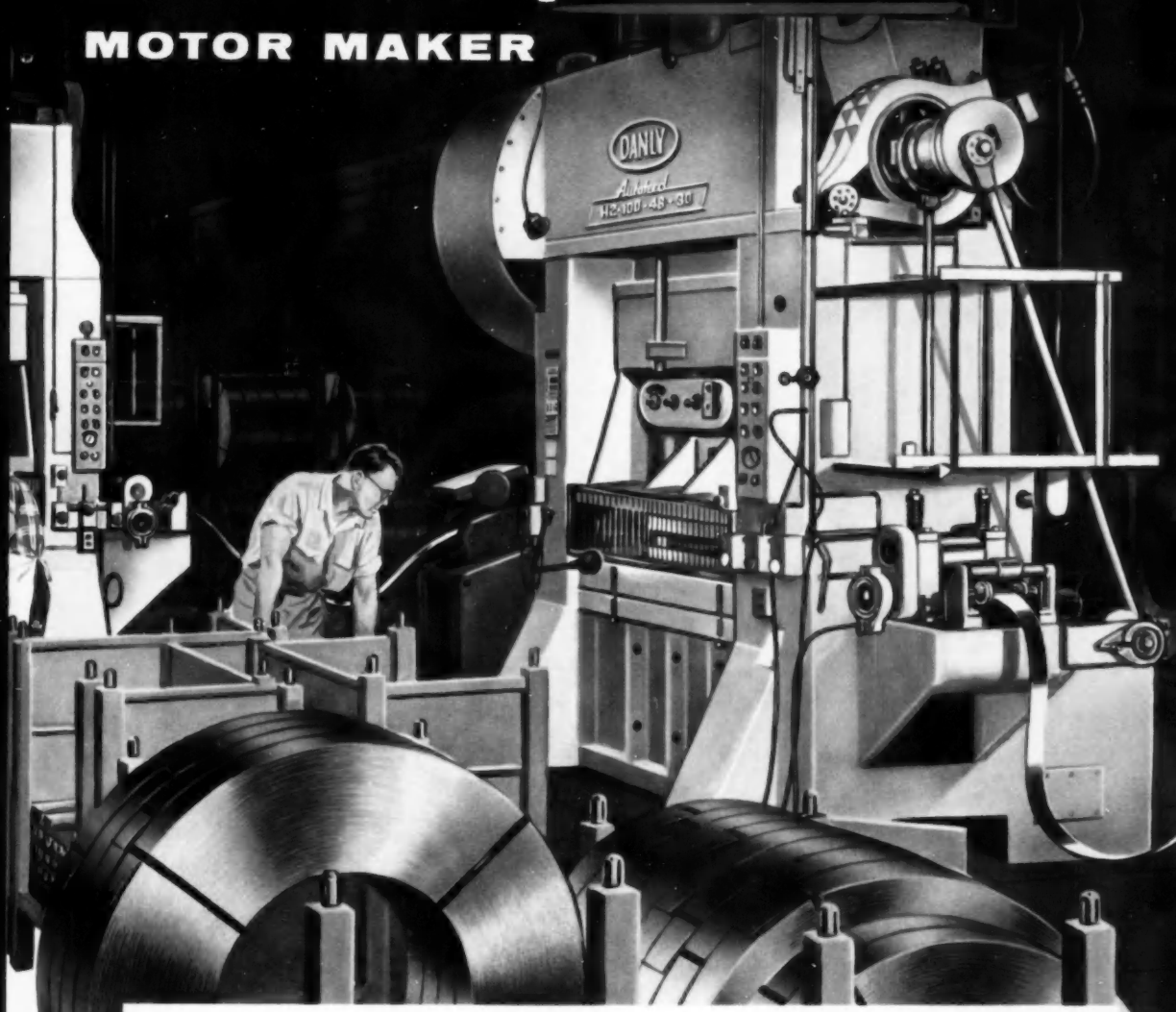
Find out *why* Danly Presses set such outstanding performance records . . . consult a Danly press engineer on *your* press requirements. Compare Danly Presses against all other presses yourself . . . check the important Danly features listed at the right. Discover why Danly Presses mean increased production at lower cost. Write for the complete new catalog on Danly Autofeed Presses today.



It costs less to run a DANLY PRESS

lamination production

MOTOR MAKER



Compare for yourself

BEFORE YOU INVEST . . . BE SURE YOU GET ALL THESE FEATURES

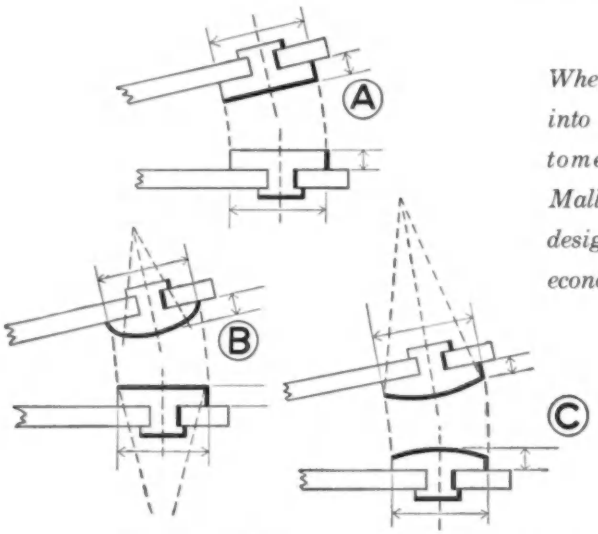
1. Machine tool precision in manufacture and assembly plus adequate lubrication assure smoother operation, longer life.
2. Danly presses are delivered "run-in" tested. Assembly and operation in the Danly plant means fewer adjustments, faster installation.
3. Danly's cool-running clutch lasts longer. Herringbone type gears and anti-friction bearings on high speed shafts wear longer.
4. Extra-heavy construction reduces vibration and deflection. Dies last longer, presses stand up under severest duty.
5. Danly features completely automatic oil lubrication including slide gibs. Should any vital bearing not be sufficiently lubricated, safety switch stops press and indicates the source of trouble.
6. Performance records in the country's biggest stamping shops prove that Danly Presses require less maintenance, greatly reduce spare part needs.
7. Controls designed and built by the press manufacturer assure the user of undivided, one-source responsibility for control and press performance on the production line.

DANLY MACHINE SPECIALTIES, INC.

2100 South Laramie Avenue, Chicago 50, Illinois

DANLY®

MALLORY



When Original Design A ran into alignment trouble, the customer proposed design B. Mallory engineers recommended design C as the most efficient and economical solution.

How economical are *your* contact designs?

Mallory Contact Engineering Offers Five Ways To Improve Economy

1. **The most effective contact material** from the extensive line developed by Mallory. More economical alloys often can satisfy *actual* service conditions.
2. **The most economical contact design . . .** for your purchasing, production and product needs.
3. **The most economical backing material** . . . from a group of Mallory alloys developed for this use.
4. **The most economical backing member design** . . . in relation to contact and product design requirements.
5. **The most economical method of assembly** of contact and backing member.

By coordinating *all* these important elements of contact design, Mallory can help you put into effect a long-range plan for cutting contact cost and assuring peak performance.

DESIGN of electrical contacts is an engineering job in which Mallory's specialized experience can often lead to substantial savings for you. A case in point—a manufacturer of circuit breakers wanted to use a combination of flat and radius-faced contacts to lick an alignment problem in production. This design required buying and stocking of two separate contact parts.

Mallory contact engineers came up with a money-saving improvement. They recommended a modified radius design to go on both the stationary and moving contacts. Substantial production time was saved by elimination of the alignment difficulty in assembly. In addition, by buying a *single* type of contact engineered for the job, instead of two separate designs, the manufacturer cut his inventory problem in half, simplified purchasing and handling, and saved a significant percentage of direct contact cost as well.

There's a good chance that you can realize comparable savings on your own contact applications, by bringing your problems to Mallory specialists. The complete engineering job that our staff can undertake will assure you of gaining the maximum in performance . . . at the peak of economy . . . for your specific requirements. For a consultation, write or call Mallory today.

Expect more . . . get more from

Serving Industry with These Products:

Electromechanical—Resistors • Switches • Television Tuners • Vibrators
Electrochemical—Capacitors • Rectifiers • Mercury Batteries
Metallurgical—Contacts • Special Metals and Ceramics • Welding Materials

P. R. MALLORY & CO. Inc.
MALLORY
P. R. MALLORY & CO., Inc., INDIANAPOLIS 6, INDIANA

A SUNDAY DRIVE ON 32 SPOT WELDS

YES . . . even your automobile wheels are assembled with Sciaky Resistance Welding



Every weekend millions of families just like yours take their Sunday drive in automobiles with spot welded wheels!

Every *day* of the week outstanding manufacturers like Motor Wheel are turning out thousands and thousands of those wheels with Sciaky patented Three-Phase resistance welding . . . faster and at lower cost than ever before!

And as for *quality* — years of exhaustive testing proved eight Sciaky spot welds better than the previous twelve precision rivets.

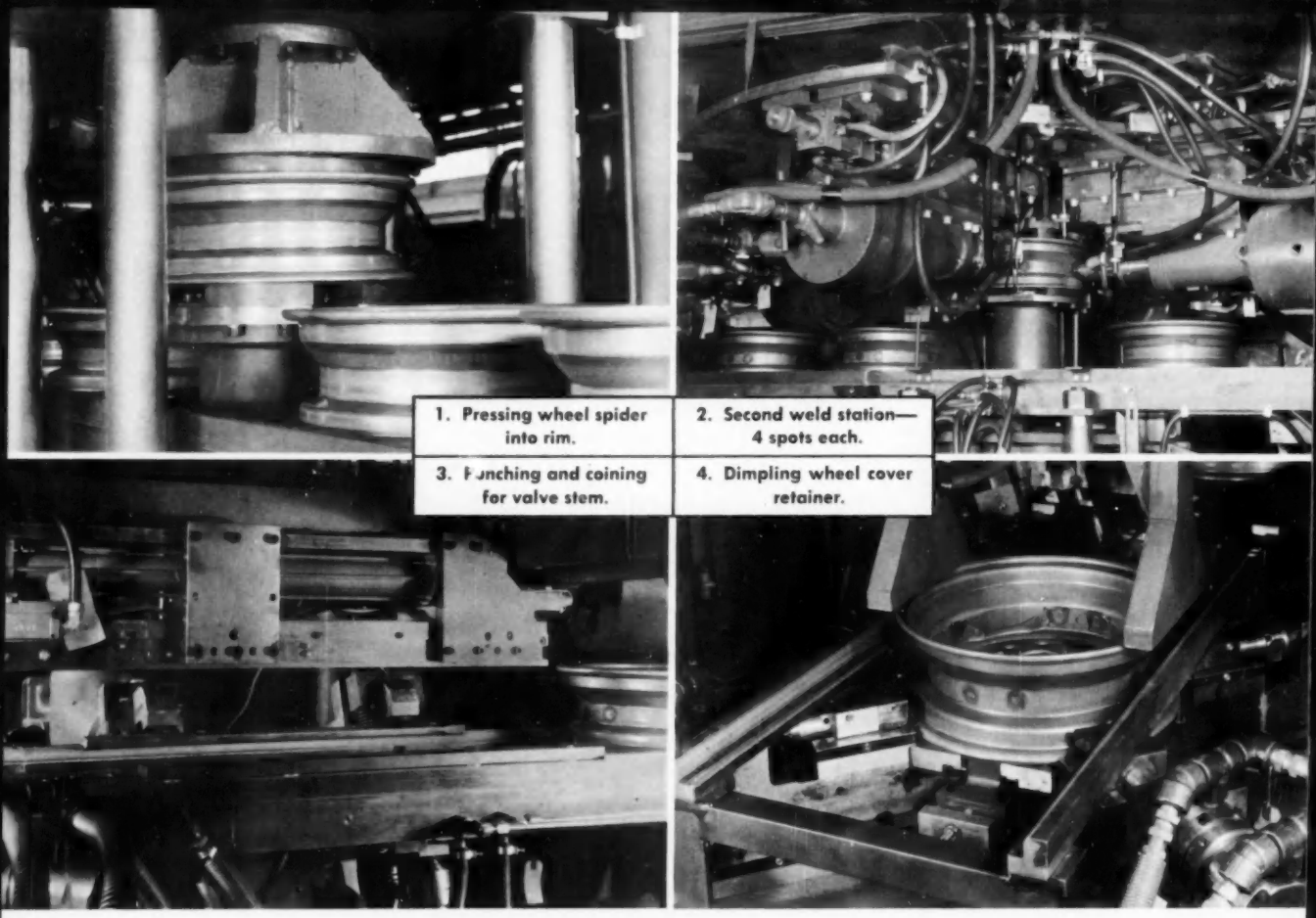
Whether *you* make automobile wheels or not, if you *do* join metals in production . . . if you want it faster and better and at lower cost . . . see about Sciaky resistance welding — just like the wheel people did!

SCIAKY®

Largest Manufacturers of Resistance Welding Machines in the World

Dick Carlton

Turn the page for the impressive details of this tremendous improvement in wheel fabrication ▶



1. Pressing wheel spider into rim.
2. Second weld station—4 spots each.
3. Punching and coining for valve stem.
4. Dimpling wheel cover retainer.

Sciaky Resistance Welding Techniques readily satisfy critical primary structures

with weld integrity and consistency in high production

Today Motor Wheel and other leading manufacturers are fabricating critically stressed automobile wheels with eight Sciaky Three-Phase spot welds instead of the previous twelve precision rivets. The elimination of the holes for rivets or other mechanical fastenings satisfies the air-tight requirements for tubeless tires as well.

A true example of automation, fully automatic Sciaky equipment includes press assembly of parts, piercing and coining of valve hole, and dimpling wheel trim retainers. Skilled labor no longer needed is made available for other important operations.

This tremendous advance in design concept and production methods is the result of years of exhaustive testing and development. Only Sciaky patented Three-Phase balanced load welding with 85% power factor (compared to 30% for conventional unbalanced load single phase) provides the integrity and consistency necessary to critical wheel assembly.



Write today for "Resistance Welding At Work," Vol. 4—#9, completely describing this outstanding application—yet another fine example of Sciaky basic thinking . . . resistance welding techniques to do *more useful work* at *lowest operating cost* with *maximum reliability.*

Largest Manufacturers of Resistance Welding Machines in the World

SCIAKY®

Sciaky Bros., Inc., 4914 W. 67th Street, Chicago 38, Illinois, POrtsmouth 7-5600

More manufacturers...More dealers...More motorists

PREFER



FRAM FIRST in research

ONLY FRAM tests filters at the world's first full-size dust tunnel. FRAM's extensive facilities can work for you too.

FRAM FIRST in quality

ONLY FRAM offers the quality that is preferred most. By actual count more vehicle manufacturers use FRAM as Standard Equipment.

FRAM FIRST in protection

ONLY FRAM has developed and produced oil, air and fuel filters for Complete Engine Protection. *All* add up to longer service and lower costs.

FRAM FIRST in preference

ONLY FRAM can make this claim. Survey after survey shows that motorists prefer FRAM more than 2 to 1 over any other filter brand made.

Over and over, surveys prove the outstanding preference for FRAM—by manufacturers, by dealers, by motorists! Manufacturers prefer FRAM because FRAM pioneered modern oil filters—and continues to pioneer filter progress. Dealers prefer FRAM because they know FRAM has built consumer demand through the years. Motorists prefer FRAM because they know FRAM for highest quality. It's easy to see why FRAM is preferred by all three! If your problem is one of filtration—whether oil, air, fuel or water—FRAM engineers will work with you, using FRAM's extensive research and development facilities, to help you find the solution. For more information, write, wire or phone the FRAM CORPORATION today.

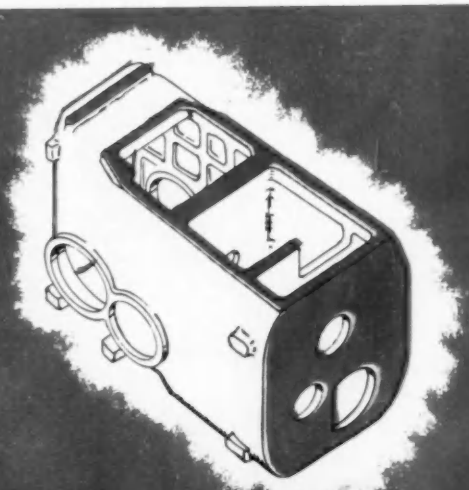
FRAM CORPORATION, Providence 16, R. I. Fram Canada Ltd., Stratford, Ontario

FRAM®
OIL • AIR • FUEL • WATER
FILTERS



CUSTOMER SPECIFIED

One of the nation's famous-name farm machinery manufacturers required a big, high-speed, precision production milling machine which would mill several surfaces on huge, 625-lb. transmission case castings in a single setup.

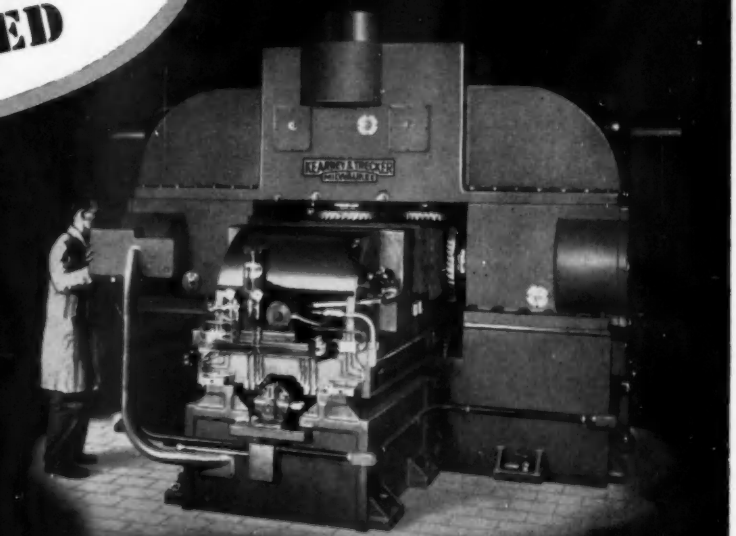


Green indicates machined surfaces on tractor transmission case.

KEARNEY & TRECKER MILWAUKEE DESIGNED

Kearney & Trecker's proposal was accepted and the result was this 44-ton, Five-Spindle Triplex machine which mills top, front and rear surfaces of tractor transmission cases at a rate of 23 pieces per hour.

Two horizontal spindles are mounted in duplex fashion and three vertical spindles on the massive bridge type head. Horizontal spindles, driven by 40-hp motors, carry 22" dia. cutters with 44 blades. Powered by a 50-hp motor, two of the vertical spindles have 22" dia. cutters and the third spindle a 6" dia. cutter with 12 tungsten-carbide blades.

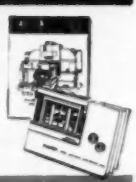


New production efficiency starts with Kearney & Trecker Milwaukee machine tools

Kearney & Trecker automatic production machines perform many operations to exacting accuracies and at lower cost. But most important to you — it's accomplished by combining standard design components with a minimum of special engineering. This means you get the production you want, the economies you need, from job-proven designs with minimum of capital investment.

With more than 50 years' experience in machine design and manufacture, Kearney & Trecker has the all-around ability to meet your production needs. Take advantage of these abilities. They can pay off in lower machining costs and more profits for you. See your Kearney & Trecker Special Machinery Division representative. He'll be glad to help you with your production requirements. Call him today.

For more details on machine illustrated ask for Data Sheet No. 1062. Booklet "Doorway to a proven method for solution of big and small metalworking problems" is also yours for the asking.



KEARNEY & TRECKER MILWAUKEE MACHINE TOOLS

Special Machinery Division

MILWAUKEE 14, WISCONSIN, U.S.A.

Builders of Precision and Production Machine Tools Since 1898

NEW!

Revolutionary AIRengineering Development by Ingersoll-Rand . . .

TORSION BAR

Torque control

IMPACTOOLS

MULTIPLE TORQUE SETTINGS
2 TORSION BARS AVAILABLE:

- **No. L735. Max. torque 60 ft. lbs.**
- **No. H735. Max. torque 90 ft. lbs.**

Now you can have precision torque control with all the nut running power and speed of the world famous I-R IMPACTOOL!



Size 5040T*

***For torques up to 550 ft. lbs., a Size 5340T *Torque Control* Impactool is available**

. . . how can YOU use these ADVANTAGES ON NUT RUNNING JOBS *where prescribed torques must be met?*

- **POSITIVE TORQUE CONTROL**—a revolutionary use of a rugged steel torsion bar for precision control of torque—combined with the power and speed of the Impactool.
- **SIMPLE TORQUE SETTING**—torsion bar adjusting sleeve is clearly calibrated for changing torque with easy-to-use torque jig.
- **TORQUE SETTING REMAINS CONSTANT**—for any nut running condition until the adjustment is changed.
- **ELIMINATES "OVER-TORQUE"**—impact mechanism rebounds instantly when preset torque is reached, tripping a foolproof rubber faced shutoff valve.
- **LOW MAINTENANCE**—combines many of the proven features of Ingersoll-Rand Impactools, with their enviable record of dependable performance and low maintenance.
- **REVERSIBLE**—full power in either direction.
- **NO CLUTCH**—to wear, slip or require adjustments.



Torque can be quickly and easily set, using the jig as shown above. The torsion bar automatically shuts off the tool when the nut running resistance becomes equal to the stress in the preset torsion bar.

Ask your Ingersoll-Rand AIRengineer for a demonstration now . . . or write direct for more information on this amazing development.

Ingersoll-Rand

Impactool Division
11 Broadway, New York 4, N.Y.

8-303

5 Simmons Fasteners offer

Economy · Quick installation · Flexibility of design ·

Whatever your application, Simmons Fasteners will fill your needs. Leading manufacturers are using Simmons Fasteners with perfect results in a wide range of products.

QUICK-LOCK



Millions in use on weather-tight lighting units, battery chargers, truck heaters, engine cowlings, access panels and doors, radio equipment covers, gas tank covers, map and data cases, transmitter cases, voltage regulators...

Easy to install, QUICK-LOCK is ideal for assembling removable panels and access doors. A 90° turn locks it in place. Stud is self-ejecting when unlocked; visual inspection shows whether fastener is locked. Spring loading takes initial load; solid supports carry increased load. Available in various sizes with choice of stud and receptacle types.

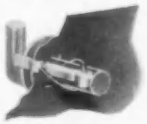
SPRING-LOCK



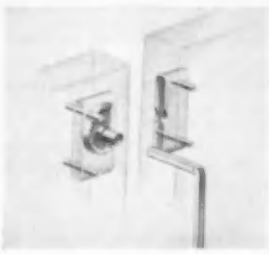
The perfect, proved fastener in such applications as removable covers and panels on electric and electronic equipment, railroad locomotives and diesels, all sheet-metal automobile parts, shipboard equipment, home appliances...

SPRING-LOCK, one-piece fastener for blind holes, has load-carrying steel spring wire. Spring steel arms lock it securely, prevent loosening under vibration. SPRING-LOCK is self-adjusting for various material thickness, locks with a twist of the wrist.

Plastic SPRING-LOCK Shelf Supports, with the strong "heart of steel," are available in your specified color...used by all major appliance manufacturers to cut costs, speed production, simplify servicing in refrigerators, ranges. Custom molded to your design requirements.



ROTO-LOCK



Ideal for portable Arctic region shelters, partitions, cabinets, built-ins of all kinds, desks, tables and other demountable furniture, knock-down shipping boxes, demountable refrigeration units, caskets, point-of-sale display assemblies...

ROTO-LOCK makes butt or right-angle joints easily. Tapered cam design permits secure locking even in misaligned or semi-open position. Carries heavy tension and shear loads; can be used for air and water-tight seals. Solidly built without springs or delicate mechanical parts; unaffected by sub-zero temperatures.

you every advantage...

Strength · Positive locking · Smooth fastening action

LINK-LOCK



Available in 3 sizes—heavy, medium, light duty. The perfect latching device where positive or heavy locking pressures are necessary, and where lock will have to withstand rough service. Proved in portable aircraft hangar construction, containers, military transit cases, instrument cases...

The springless latching device for use wherever pre-loaded closure is required. *(Also spring-loaded. See below.)* Impact and drop-resistant, LINK-LOCK provides heavy fastening pressure and high load-carrying capacity. Excellent for water and pressure-tight sealing. Withstands 70-below temperatures.



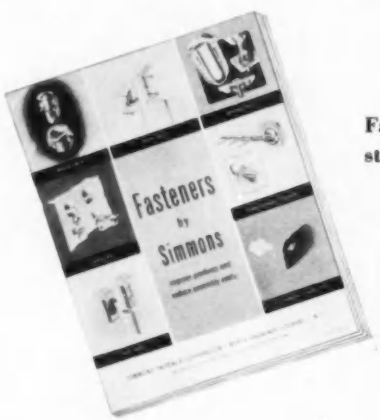
New! Spring-Loaded LINK-LOCK...medium and heavy duty...ideal for less expensive containers where costs won't permit precision production. Spring provides take-up to compensate for set in gasketing, irregularities of sealing surfaces.

DUAL-LOCK



An absolutely vibration-proof, impact-proof high-load fastener that will not accidentally unlock or loosen...ideally suited for demountable structures, guided missile assemblies, shipping containers, aircraft cowlings and sheet metal guards, and all butt-joint fastening...

Double-acting take-up in DUAL-LOCK insures heavy closing pressure with minimum pressure on operating tool. Trigger action of DUAL-LOCK assures full open and closed positions. Can be recessed in panels or surface mounted. Withstands 7000-lb. tension, and can be readily modified for light load applications.



Send today for your copy of the 40-page Simmons Fastener catalog, which gives specifications, applications, installation instructions. Samples of all Simmons Fasteners are available.

SIMMONS
FASTENER CORPORATION
1749 North Broadway, Albany 1, New York

Automatic Production

WITH BARNESDRIL MACHINES

gives you
more pieces per hour
more operations per cycle
and less cost per piece

Production Unit-Type Machines

- Single or Multiple Spindle
- Anti-Friction Spindle Bearings
- Power Indexing or Drum-Type Tables
- Centralized Control Panel
- Infinite Feeds
- Selected Speeds
- Automatic Lubrication



Write for Bulletin 150L

These new BARNESDRIL High Production Units take full responsibility for precision hole machining and finishing at high rates of output and less cost per piece.

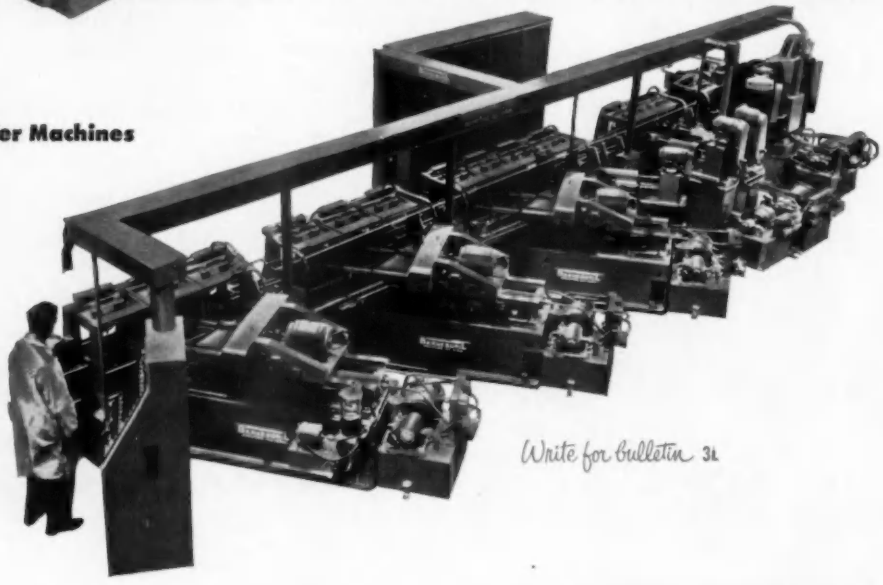
Engineered to suit your particular production problems, you can select your own operations and rate of output and BARNESDRIL Engineers design the machine and the cycle to produce these.

Automatic cycling and indexing, with precision control over each operation, assures constant duplication of parts at a prescribed rate of output. Operators simply load and unload at the completion of each machining cycle. As a result you produce more pieces per hour at less cost each.

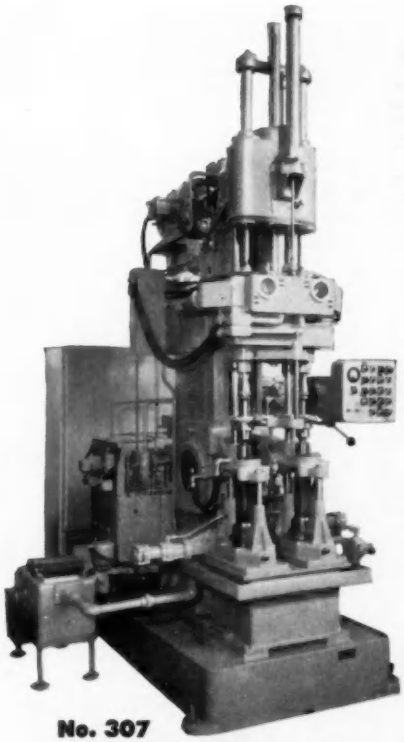
Consult your BARNESDRIL Sales Engineer today, and ask him how these improvements can be applied to your production problems for greater efficiency and reduced cost.

High Production Transfer Machines

- Combined Operations Sequence
- Automatic Oiling System
- Chip Conveyor System
- Electronic Control System
- Automatic Cycling

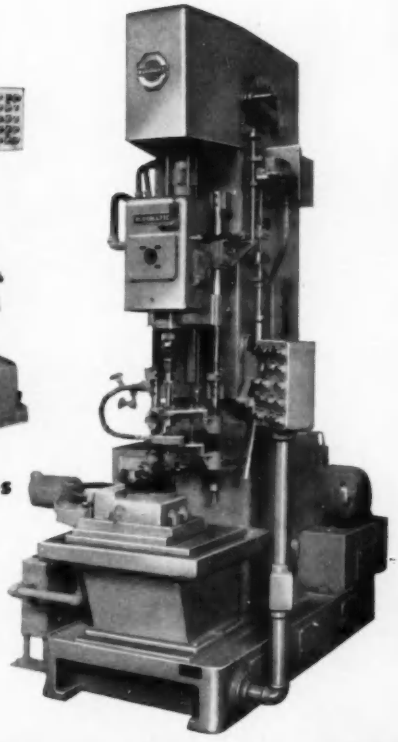


Write for Bulletin 3L



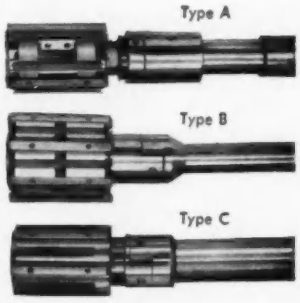
Hydraulic Honing Machines

Automatic Cycling
Plugmatic Sizing
Remote Control Hone Expansion
Adjustable Stroke Control
Positive Automatic Bore-To-Bore Sizing



No. 307
Production Honing Machines
No. 223

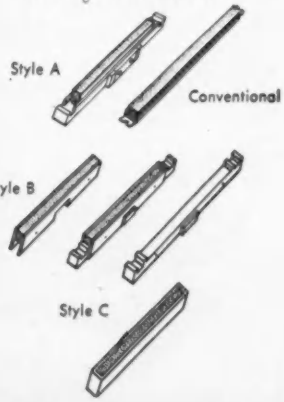
Write for Bulletin 121L

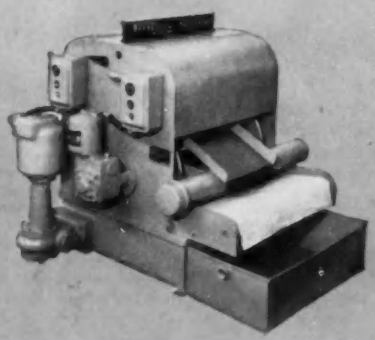


Honing Tools and Abrasives

Long Abrasive Stone Life
Stepped-Up Stock Removal
Quick-Mounting
Economical Replacement
Improved Cutting Edge Support
Electrical
Mechanical
Hydraulic Expansion

Write for Bulletin 500L





Automatic Coolant Cleaning

Efficient coolant cleaning sharply reduces machine maintenance and downtime, increases finish quality, and prolongs coolant life. New BARNESDRIL developments offer even greater improvements in coolant supply and chip disposal.

Write for Bulletin 300L



HOLE BARNESDRIL FINISHING

BARNES DRILL CO.

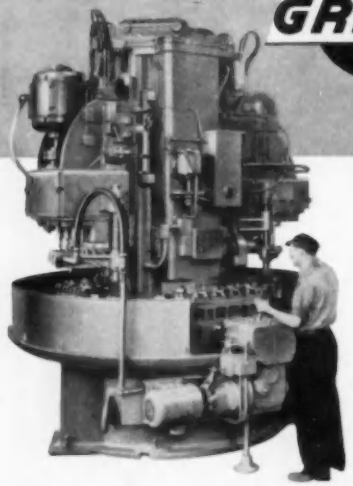
850 CHESTNUT STREET • ROCKFORD, ILLINOIS

PRODUCTION MACHINERY

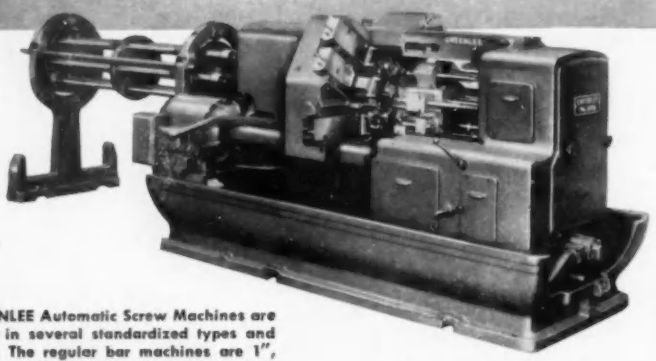
GREENLEE AUTOMATICS

PRODUCTION MACHINERY

GREENLEE SPECIAL MACHINES



This is an example of a Vertical-type Special-purpose Four-station Automatic Indexing Machine designed and built to perform a number of important operations on connecting rods for an automobile engine.



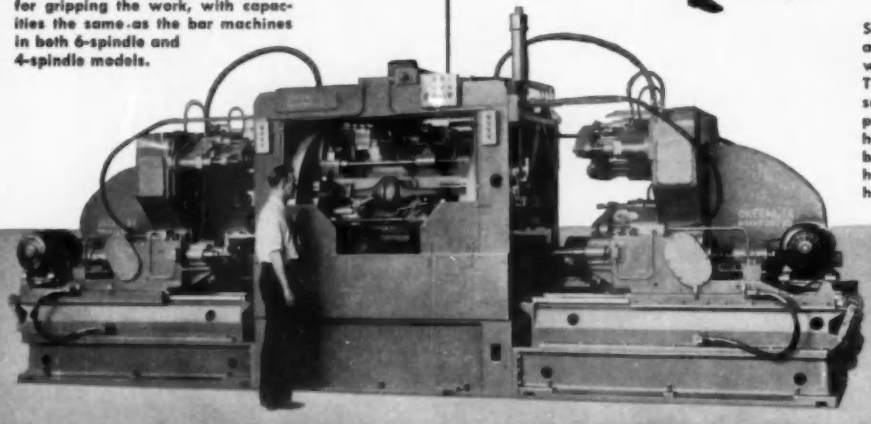
GREENLEE Automatic Screw Machines are made in several standardized types and sizes. The regular bar machines are 1", 1⅛", and 2" capacities in 6-spindle models, and 1⅜" and 2⅛" in the 4-spindle models. GREENLEE Automatics have a number of distinctive features which help to lower costs on both long-run and short-run jobs.



GREENLEE Automatics are also made for second operation work, an example of which is shown here. Collets are used on these machines for gripping the work, with capacities the same as the bar machines in both 6-spindle and 4-spindle models.



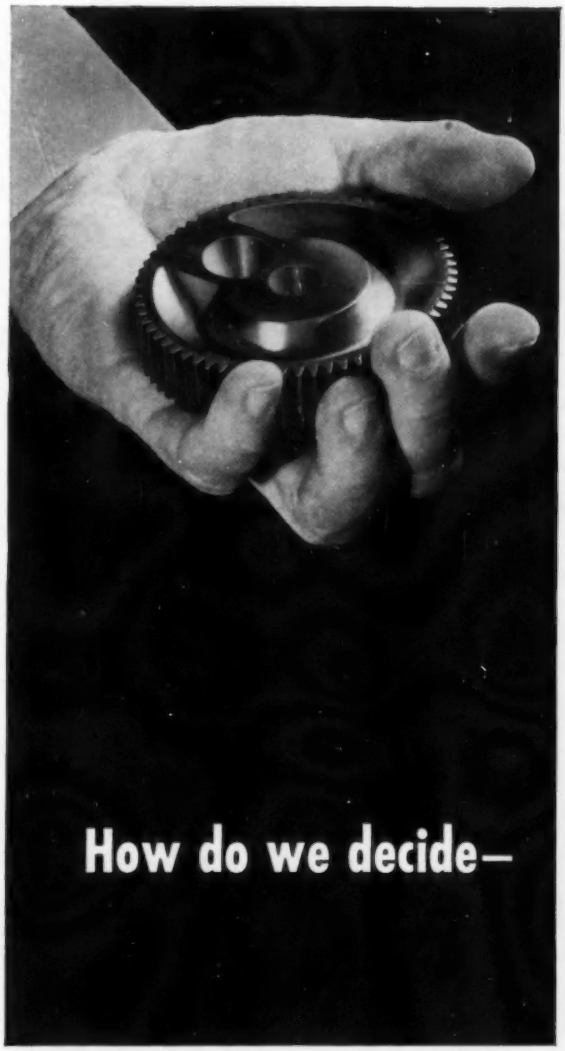
Since 1935 GREENLEE has pioneered in the design and manufacture of Automatic Transfer Machines widely used in the big mass-production factories. The example shown here is a comparatively small and compact six-station machine which performs a group of operations on the ends and head faces of a V-8 cylinder block. Some of the bigger GREENLEE Transfer Machines will do several hundred operations in a cycle time of less than half a minute.



At the left is another GREENLEE Special Machine, in this case a Horizontal, Two-way, Four-station, Drilling, Boring, and Tapping Machine for finishing a series of holes in the ends of rear-axle housings. GREENLEE experience is available for the design and manufacture of a wide range of such cost-reducing machines.

GREENLEE BROS. & CO. 1753 Mason Ave., Rockford, Illinois

MULTIPLE-SPINDLE DRILLING, BORING, TAPPING MACHINES • AUTOMATIC SCREW MACHINES • AUTOMATIC TRANSFER MACHINES





which part should be made of metal powder?

We ask: **How will it be used in the end product of which it will be a component?** What are the loads, tolerances, and shape of the individual part? How will it be lubricated? Are there any special requirements such as hardness and finish? Do the quantities justify tooling costs?

These are the questions that were answered before any decisions were made on the parts shown above —both of which are made of metal powder.

Because Moraine Products can draw upon a wide range of experience with many different mass production processes and their applications to specific problems, our judgment on these questions can be considered sound. When we recommend metal powder, it is because we are convinced, in our own minds, that it is the material and the process best suited for the job the specific part must do.

Other Moraine Products include: Moraine power brakes—Delco hydraulic brake fluids, brake assemblies, master cylinders, wheel cylinders and parts—Moraine friction materials—porous metal parts—rolled bronze and bi-metal bushings—self-lubricating bearings, Moraine-400 and M-100 automotive engine bearings.

Another General Motors Value

Moraine Products
Division of General Motors, Dayton, Ohio

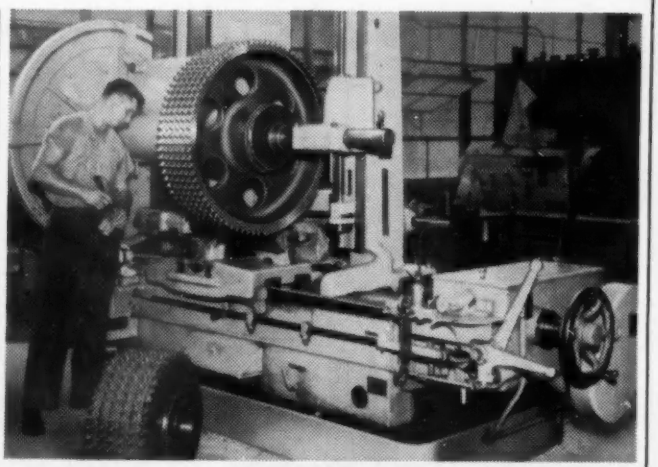
in case you missed the News!

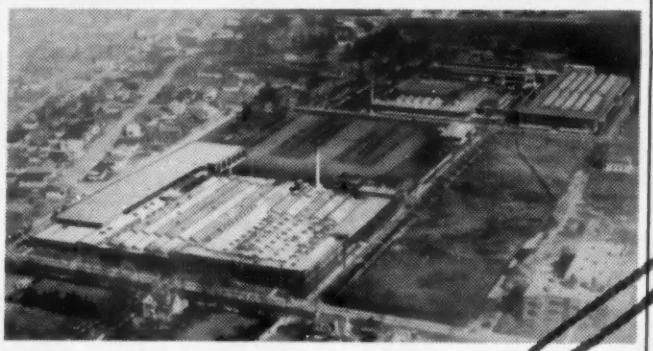
Newark Gear Cutters and Hobbers

are now manufactured by POTTER & JOHNSTON COMPANY at the P&J plant, Pawtucket, Rhode Island

TO AVOID DELAYS AND TO INSURE PROMPT ATTENTION AND HANDLING, PLEASE ADDRESS ALL INQUIRIES AND ORDERS DIRECT TO POTTER & JOHNSTON AT PAWTUCKET.

As previously announced, assets of the Newark Gear Company have been acquired by Potter and Johnston Company, subsidiary of Pratt & Whitney Company, Incorporated. In addition to the complete line of P&J Automatic Chucking Turret Lathes, these long-famous automatic gear machines are now being manufactured in our Pawtucket, Rhode Island plant. Product literature, including complete specifications and engineering data, is available. Write on your Company letterhead outlining your requirements.





POTTER & JOHNSTON COMPANY

PAWTUCKET, RHODE ISLAND

SUBSIDIARY OF PRATT & WHITNEY COMPANY, INCORPORATED

AUTOMATIC CHUCKING TURRET LATHES

P&J POTTERS NEWARK GEAR HOBBERS

NEWARK GEAR CUTTING MACHINES

P & W BRANCH OFFICES: Birmingham • Boston • Chicago • Cincinnati • Cleveland • Detroit • Los Angeles • New York • Philadelphia • Pittsburgh • Rochester • San Francisco • St. Louis EXPORT DEPT: Pawtucket, Rhode Island AGENTS: Dallas, Southwest Industrial Sales Co. • Houston, Wessendorf, Nelms & Co.

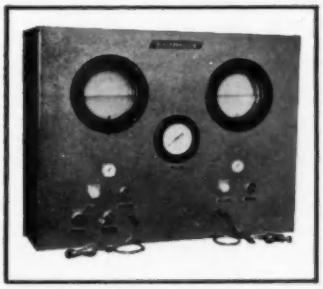
SEE THE LEAKS...

WITH Vacuum

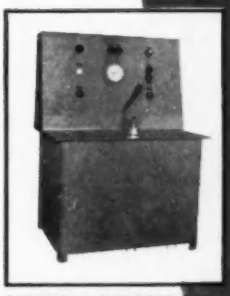
AUTOMATIC TRANSMISSIONS • OIL PANS • WATER PUMPS • MANIFOLDS • CYLINDER HEADS • CYLINDER BLOCKS • FUEL TANKS • AXLE HOUSINGS • MISCELLANEOUS CASTINGS

VACUUM TESTING

3 TIMES FASTER—DRY, ACCURATE indication of leaks which can be observed, semi-automatic, or fully automatic.



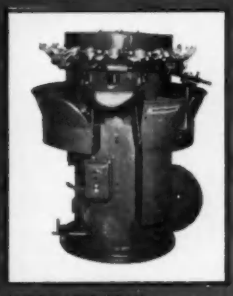
TWO CELL BUBBLER LEAK INDICATOR



ALUMINUM EXPLOSION PROOF ORDINANCE LEAK CHECKER



"INTAKE VALVE WASHER" LEAK DETECTING MACHINE



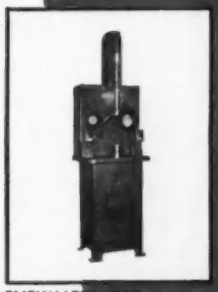
AUTOMATIC LEAK DETECTOR FOR SMALL CAST SWEAT FITTINGS

PRESSURE TESTING

PNEUMATIC—HYDRAULIC

COMBINATION PRESSURE & VACUUM FOR MAXIMUM LEAK INDICATION

Test for strength with pressure and indicate leaks with sensitive vacuum instruments simultaneously or in sequence. Hydraulic testers designed for extreme pressure applications.



PNEUMATIC LEAK CHECKING OF METAL TO METAL SEAL ON AUTOMATIC TRANSMISSION REACTOR SHAFT

MEASURING & GAGING WITH VACUUM GO--NO GO

Vacuum can be used for measuring dimensions or surface condition in problems difficult or impossible with other methods. Typical examples are surface flatness checking, valve seat angularity gaging, and checking valve seat concentricity in relation to valve guide.

LABORATORY FACILITIES

LABORATORY FACILITIES FOR APPLICATION, EXPLORATION AND JOB TESTING; FEATURING VACUUM TO .1 mm; PRESSURES TO 2500 P.S.I. PNEUMATIC

FOR RECOMMENDATIONS REGARDING YOUR TEST APPLICATION SEND ENGINEERING DATA TO REPRESENTATIVE OR DIRECT TO FACTORY.

OR SEND COUPON TODAY

GENTLEMEN: Please send full details on the WHITTINGTON Vacuum and Pressure Testing Equipment.

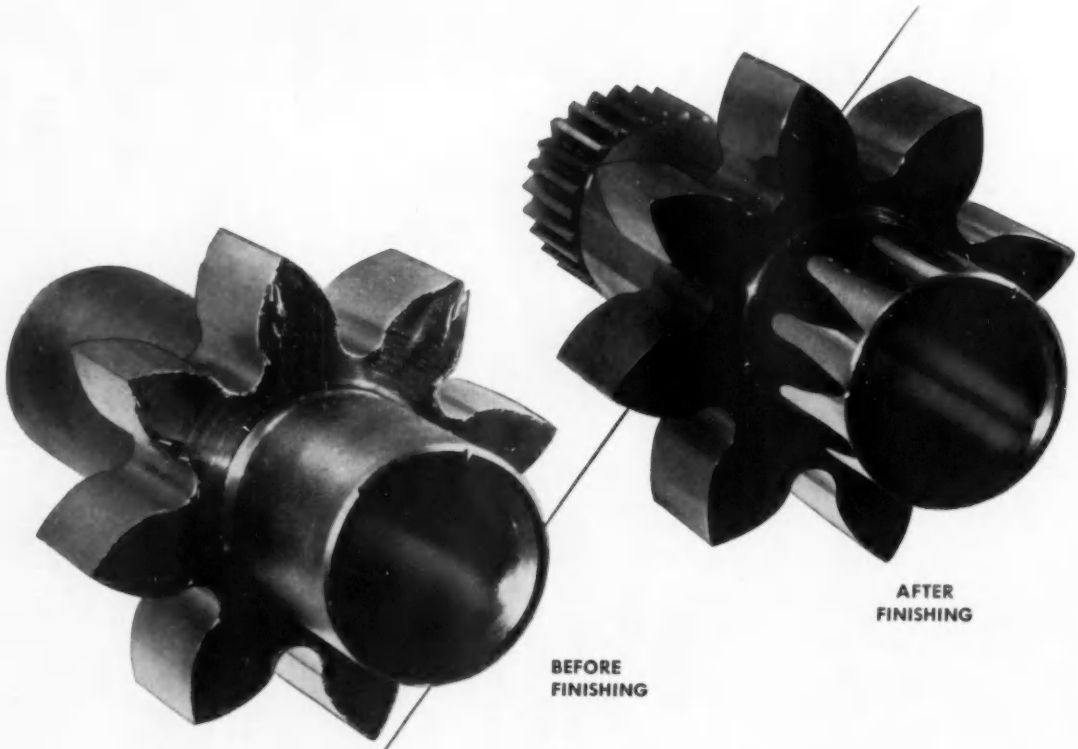
NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

WHITTINGTON PUMP AND ENGINEERING CORPORATION
1126 PROSPECT STREET—INDIANAPOLIS 3, INDIANA



Finished to run without a . . .

drop of oil



Osborn's Brushamatic 3A is one of a complete line of Brushamatic finishing machines for semi-automatic or completely automated finishing.*
*Trade-Mark

MORE precise finishing of parts is vital to the continuing improvements in jet aircraft components. Fuel pump gears, shown above, are an example.

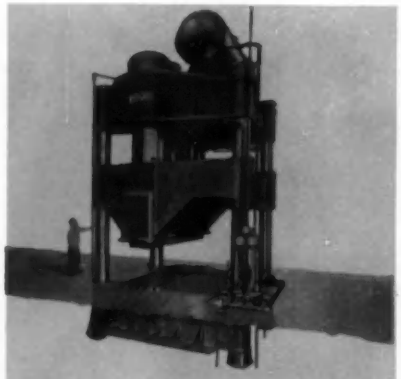
Unlike the original oily, kerosene-type fuels, today's jet fuel has extremely low lubricating quality. Brushing to remove burrs—blend surfaces and edges of teeth—is an important early step in producing the micro-finish that permits fuel pump gears to run at speeds to 3500 rpm, under pressures to 900 psi . . . without lubrication. Higher finishes are also reducing torque, greatly increasing equipment service life.

An **O**sborn **B**rushing **A**nalysis can point out ways to improve your finishing operations. Ask about it today. Write *The Osborn Manufacturing Company, Dept. E-39, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

ASTE
Visit Our Booth 446
INDUSTRIAL EXPOSITION
INTERNATIONAL AMPHITHEATRE
CHICAGO . . . . . MARCH 19-23, 1956

Osborn Brushes

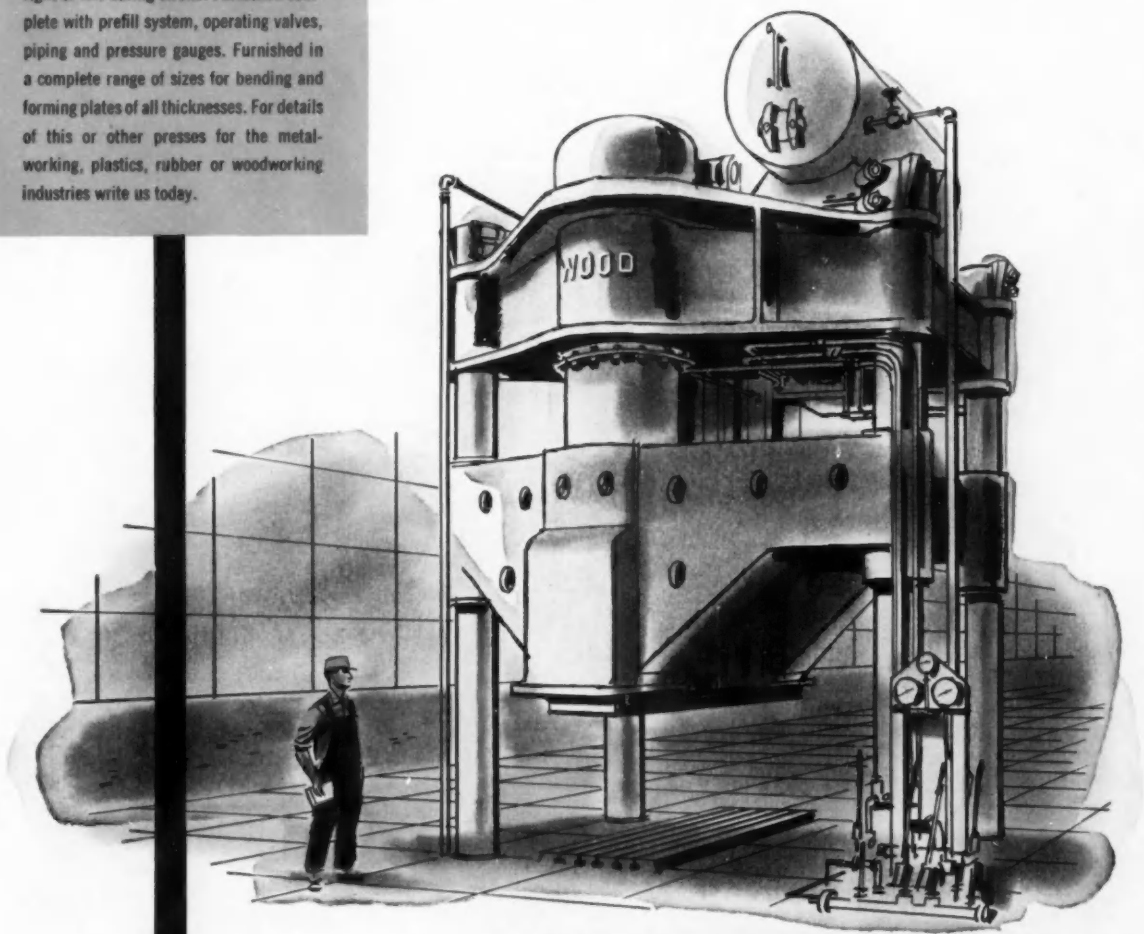
OSBORN
BRUSHING METHODS • POWER, PAINT AND MAINTENANCE BRUSHES
BRUSHING MACHINES • FOUNDRY MOLDING MACHINES



1500-ton Heavy-Duty Forming Press for bending and forming operations on heavy steel plate. Moving platen can be tilted right or left during stroke. Furnished complete with prefill system, operating valves, piping and pressure gauges. Furnished in a complete range of sizes for bending and forming plates of all thicknesses. For details of this or other presses for the metal-working, plastics, rubber or woodworking industries write us today.

You'll like what it does to production

It's just plain common sense—when your down-time decreases your production is bound to increase. Down-time can't be eliminated, but R. D. Wood presses hold it to a minimum. The meticulous design, choice materials and careful craftsmanship that go into a Wood press produce a superior product—a dependable, smooth-working press that can't help but increase production records. Products with the Wood stamp of quality have been piling up production records for more than 150 years.



R. D. WOOD COMPANY

PUBLIC LEDGER BUILDING • PHILADELPHIA 5, PENNSYLVANIA

Representatives in Principal Cities



MAKERS OF HYDRAULIC PRESSES AND VALVES • FIRE HYDRANTS • CAST-IRON PIPE • GATE VALVES • GAS PRODUCERS • ACCUMULATORS



bright (when they should be bright)

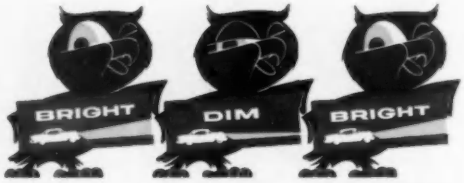
dim (when they should be dim)

automatically!

In a single demonstration, Autronic-Eye can help to sell itself. For prospects readily see they're ahead—in night-driving ease and safety—once they drive a car that's Autronic-Eye-equipped. They like the way Autronic-Eye automatically takes over the chore of dimming headlights . . . the way it saves them some 200 "steps" per hour on the dimmer switch. Be sure to demonstrate this exclusive profit feature to every new-car prospect. Guide Lamp Division of General Motors, Anderson, Indiana.



Watch for "WIDE WIDE WORLD" Sunday afternoons on NBC-TV



AUTOMATICALLY AT NIGHT

Autronic-Eye Package 987310 for 1955-'56 Pontiacs and Chevrolets and 1955 Buicks. 897139 for 1956 Buick cars.

GM GENERAL MOTORS

AUTRONIC-EYE®

CONTROLS HEADLIGHTS AUTOMATICALLY

P. S. FOR MORE LIGHT . . . AIMED RIGHT . . . REPLACE OLD HEADLAMPS WITH NEW GUIDE T-3 SAFETY-AIM UNITS!

Got a tough tubing connection job?...

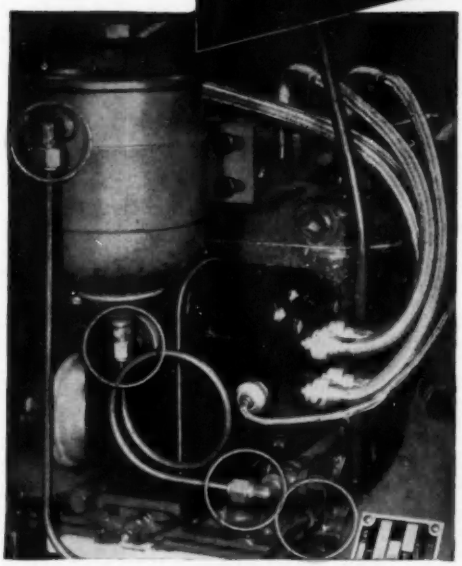
IMPERIAL FLEX FITTINGS

May Be the Answer

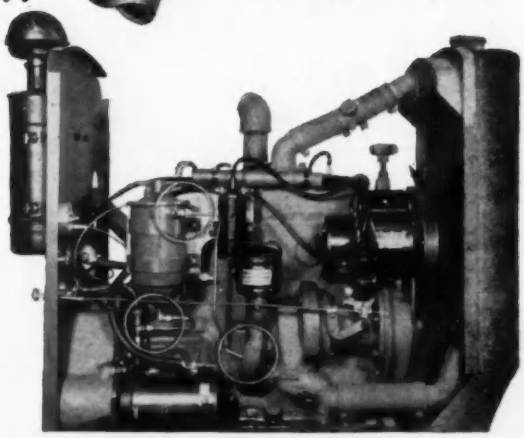


The tube coupling with vibration and shock absorbing sleeve.

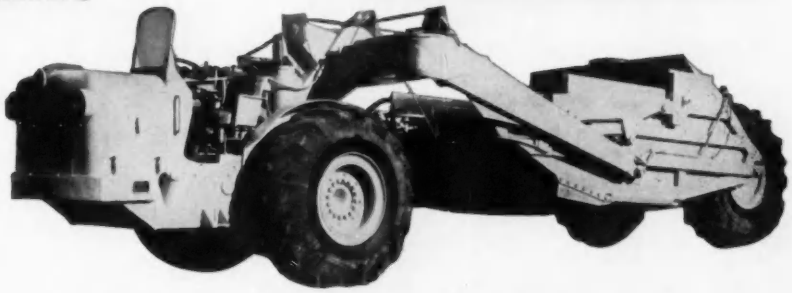
This Elastic Sleeve in Flex Fittings Absorbs Vibration and Shock . . . permits tubing to flex and at the same time assures a positive pressure tight seal. Flex Fittings are used as standard equipment on this heavy-duty engine.



Flex Fittings make joints virtually indestructible by VIBRATION . . . withstand SHOCK and MINOR TUBE MOVEMENT



Flex Fittings, circled on this engine, are very easy to install . . . simply slip nut and Flex sleeve over tubing . . . insert tubing into body as far as it will go and tighten nut—that's all.



Whether it's earth movers (illustrated), tractors, diesel engines, heavy power equipment or machinery, Flex Fittings will do the job. They have been thoroughly proved by extensive use.

Flex Fittings Can Be Used With All Kinds of Tubing

Imperial Catalog 344 gives you complete information on Flex Fittings. Ask for your copy.

THE IMPERIAL BRASS MFG. CO., 1241 W. Harrison St., Chicago 7, Illinois

IMPERIAL

PIONEERS IN TUBE FITTINGS AND TUBE WORKING TOOLS

LINDBERG INDUCTION UNIT IMPROVES HEAT TREATING PROCESSES AT J.I. CASE...

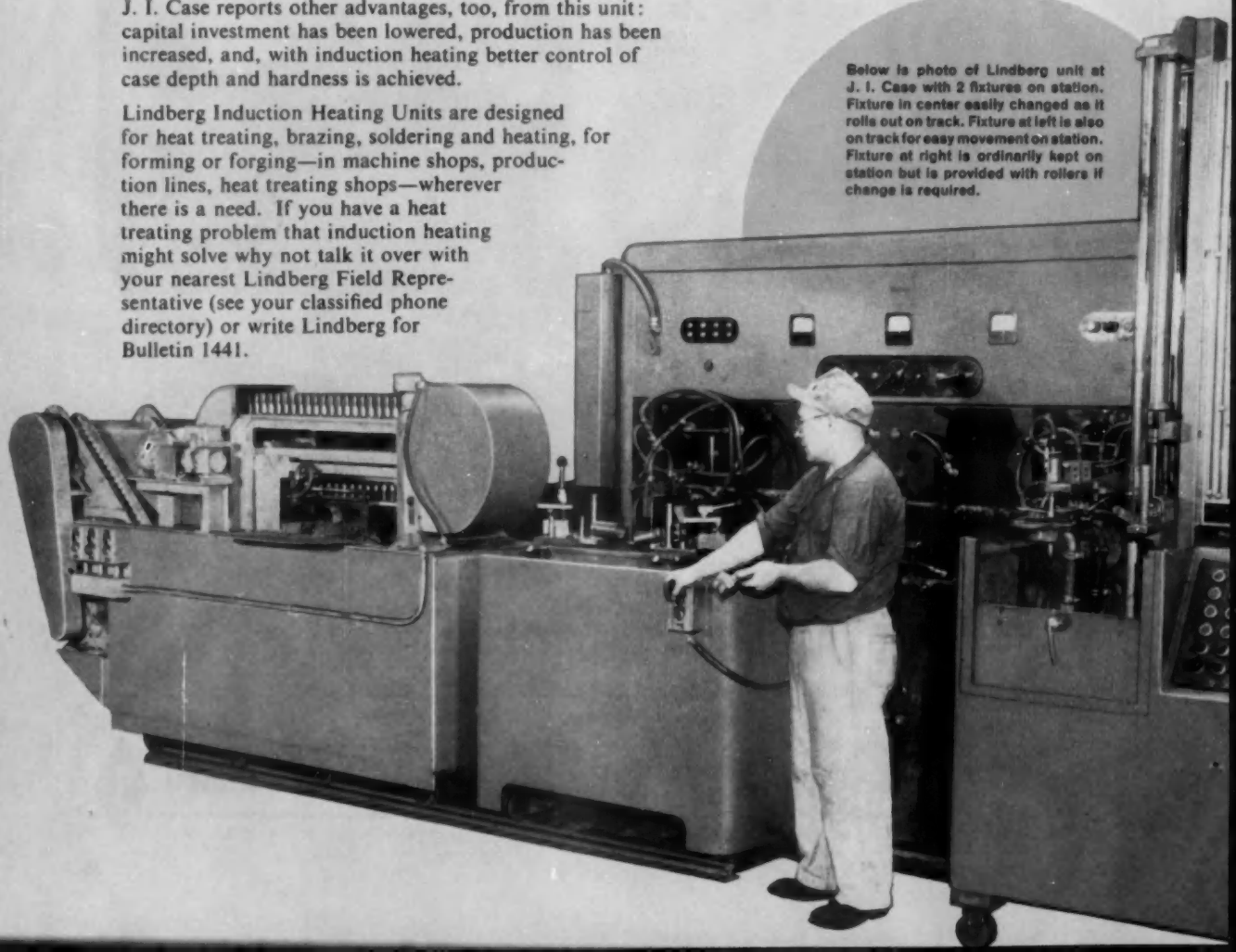
SAVES ½ ITS TOTAL COST— *IN 1 YEAR!*

A single Lindberg 2-station High Frequency Induction Heating Unit at J. I. Case Co., Racine, Wisc., is providing a happy combination of sizeable cost savings and improved quality and production efficiency in heat treating parts for Case tractors. Actually, the dollar savings effected with this Lindberg unit will repay its total original cost in *less than 2 years!*

This single unit and the five work fixtures provided with it, working on 2 to 3 shifts, 5 days a week to meet production requirements, heat treat some 63 separate tractor parts. Work fixtures are readily changeable, set-up time is materially reduced, and because of the 2-station design, the unit can operate continuously while work fixture is being changed over on one station.

J. I. Case reports other advantages, too, from this unit: capital investment has been lowered, production has been increased, and, with induction heating better control of case depth and hardness is achieved.

Lindberg Induction Heating Units are designed for heat treating, brazing, soldering and heating, for forming or forging—in machine shops, production lines, heat treating shops—wherever there is a need. If you have a heat treating problem that induction heating might solve why not talk it over with your nearest Lindberg Field Representative (see your classified phone directory) or write Lindberg for Bulletin 1441.



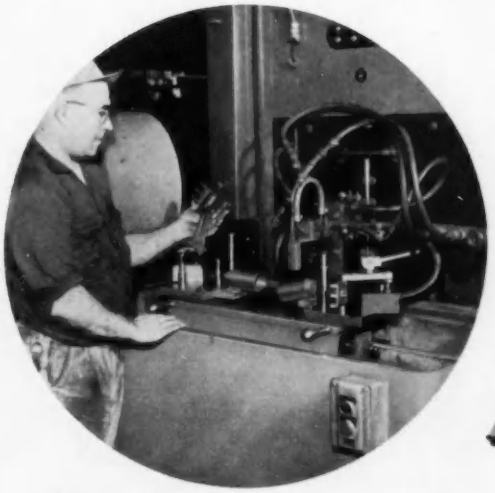
Below is photo of Lindberg unit at J. I. Case with 2 fixtures on station. Fixture in center easily changed as it rolls out on track. Fixture at left is also on track for easy movement on station. Fixture at right is ordinarily kept on station but is provided with rollers if change is required.



(Above) Hydraulic male coupling is being treated on this fixture. 3 other parts are treated by it, too.

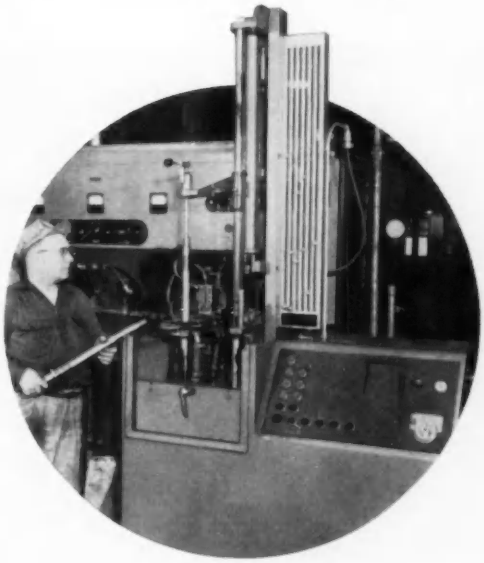


(Above) This shows fixture handling inlet and exhaust valve rocker arms. Same fixture treats 6 other parts.

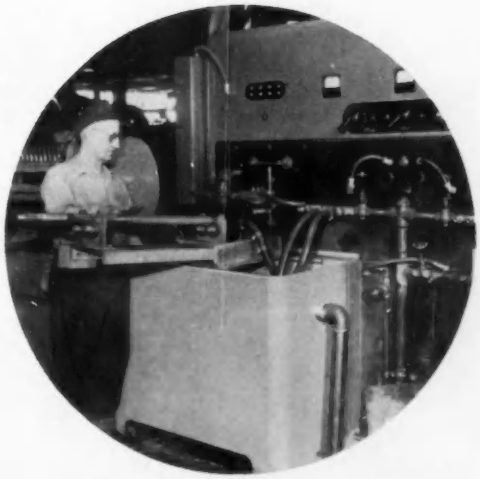


(Above) This fixture is selectively hardening pads and slots on shifter forks. It is also used for treating 17 other parts.

(Below) This fixture is shown selectively hardening a front axle king pin. It handles piece up to 45½" long, 35" of which can be scanned to desired depth. It is also used for 34 other parts.



(Below) Power take-off hydraulic drive shafts are one of the 3 parts treated by this fixture.



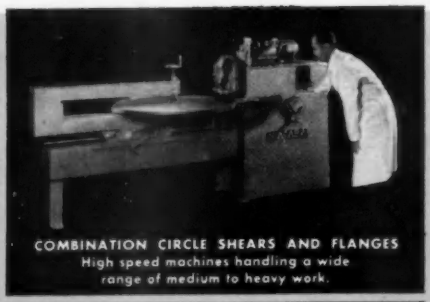
LINDBERG
HIGH FREQUENCY DIVISION
Lindberg Engineering Company
2491 West Hubbard St., Chicago 12, Ill.

In plate or sheet metalworking...

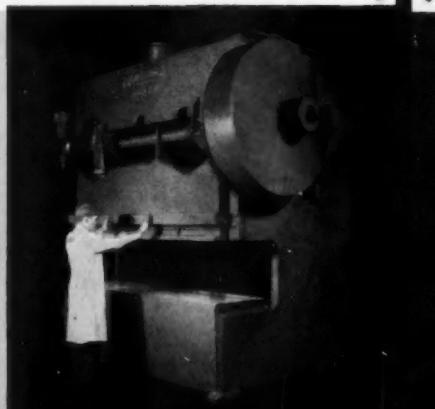
NIAGARA MACHINES CAN



PRESS BRAKES
50 - 775 ton capacities.



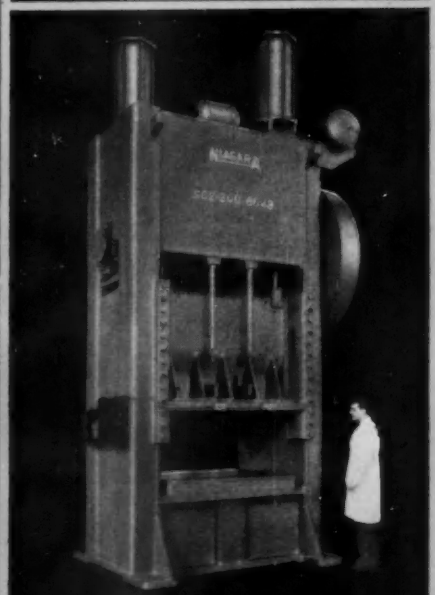
COMBINATION CIRCLE SHEARS AND FLANGES
High speed machines handling a wide range of medium to heavy work.



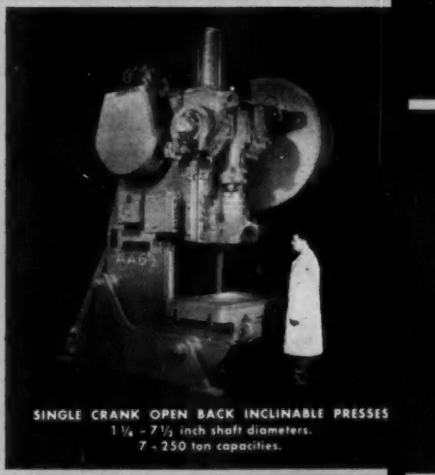
GAP FRAME DOUBLE CRANK PRESSES
3 - 6 ½ inch shaft diameters.
48 - 222 ton capacities. Also, inclinable series.



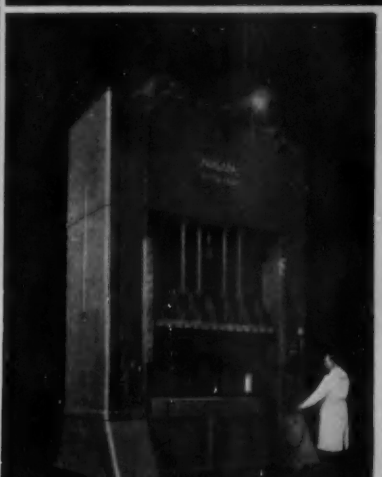
BENDING ROLLS
Hand and power driven for a wide range of lengths and thicknesses.



STRAIGHT SIDE DOUBLE CRANK PRESSES
50 - 300 ton capacities.



SINGLE CRANK OPEN BACK INCLINABLE PRESSES
1 ¼ - 7 ½ inch shaft diameters.
7 - 250 ton capacities.



STRAIGHT SIDE ECCENTRIC GEARED PRESSES MODIFIED AND EQUIPPED FOR AUTOMATION
1, 2 and 4 point suspension.
100-1000 tons.



FRONT-TO-BACK CRANKSHAFT OPEN BACK INCLINABLE PRESSES
Standard and automation models.
75-200 tons.

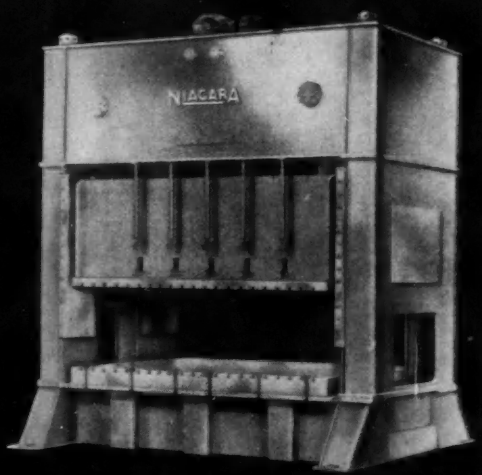


FRONT-TO-BACK CRANKSHAFT ADJUSTABLE BED PRESSES
Standard and modified models.
22-150 tons.

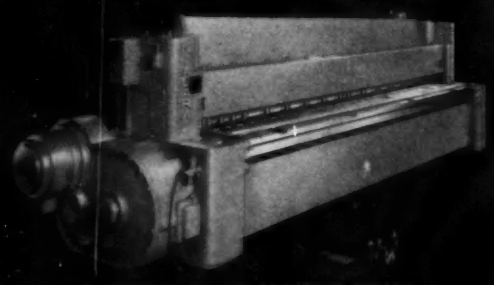


FRONT-TO-BACK CRANKSHAFT DEEP THROAT PRESSES
22-150 ton capacities

❋ DO THE MOST FOR YOU



STRAIGHT SIDE ECCENTRIC GEARED PRESSES
One, two and four-point suspension.
100 - 1000 ton capacities.



UNDERDRIVE POWER SQUARING SHEARS
Shim stock to 1 inch capacities in
lengths from 3 - 20 feet.

❋ MOST EXTENSIVE LINE:

From giant, power-operated machinery to small hand tools

❋ MOST ADVANCED DESIGNS:

Years ahead in performance through forward-thinking engineering

In the world's largest automotive and appliance plants or the smallest of sheet metal shops, Niagara machines and tools are usually at work "in force."

Batteries of giant presses are teamed up with speedy ring and circle shears. Massive, rugged press brakes stand side-by-side with powerful bending rolls and squaring shears. Versatile lever punches, rotary machines, groovers and seamers . . . all operate together to produce a better product at lower cost. The Niagara lines are "companion lines" of metalworking machines and tools that work together. A Niagara-equipped shop or plant is years ahead in quality and volume of production.

Whatever you require — power presses or hand tools — Niagara is the line that can do the most for you. It is the most complete in the industry . . . the most advanced in engineering. You can consult a Niagara representative with complete confidence of unbiased recommendations. Niagara has the right machines and tools for your requirements.

NIAGARA

America's Most Complete Line of Presses,
Shears, Machines and Tools
for Plate and Sheet Metal Work

POWER PRESSES • PRESS BRAKES • POWER SQUARING SHEARS • ROTARY MACHINES • SLIP ROLL FORMERS • POWER ROTARY SHEARS • DRUM MAKING EQUIPMENT • ELECTRONIC AUTOMATIC WELDERS • GROOVERS AND SEAMERS • HAND OR FOOT OPERATED SHEARS • FOLDERS-BRAKES • LEVER SHEARS AND PUNCHES • HAND TOOLS

BRING YOUR FILES UP-TO-DATE WITH INFORMATIVE NIAGARA BULLETINS

A diversified and extensive list of machines and tools make up the famous Niagara line. Some of the principal types are illustrated. Be sure that you have the latest data on the ones that apply to your work. At your request, specific Bulletins will be mailed promptly.



NIAGARA MACHINE & TOOL WORKS • BUFFALO 11, N. Y.

DISTRICT OFFICES:

Buffalo • Cleveland • Detroit • New York • Philadelphia

Dealers in principal U. S. cities and major foreign countries

More Strength Per Pound Per Dollar



. . . that's bargain buying in delivery truck bodies. It means a strong, light, long-lasting body that carries more payload.

. . . That's why more and more truck body buyers are turning to Boyertown Auto Body Works—famous for carriage and delivery truck bodies for 83 years.

Every Boyertown body is built of high-strength, low-alloy steel—press-formed by Parish Pressed Steel Company—makers of more than 7,000,000 automotive frames . . .

. . . and Parish fabricates with Alan Wood's high-strength, low-alloy steel—Dynalloy.

For more strength—per pound—per dollar in truck bodies, choose Dynalloy . . . fabricated by Parish . . . and built into a body engineered by Boyertown.

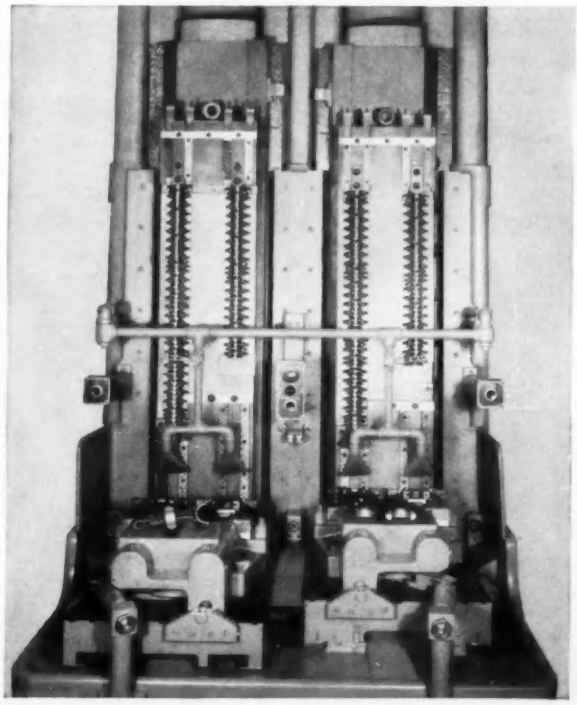
The result is bound to be satisfaction!

ALAN WOOD STEEL COMPANY
steelmasters for 130 years · CONSHOHOCKEN, PENNA.

DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia • New York • Los Angeles • Atlanta Boston • Buffalo • Cincinnati • Cleveland • Detroit • Houston • Pittsburgh • Richmond • St. Paul San Francisco • Seattle • Montreal and Toronto, Canada—A.C. Leslie & Co., Limited

IRON PRODUCTS
"Swede" *pig iron*
STEEL PRODUCTS
Plates (sheared)
A.W. Dynalloy (high-strength steel)
Hot rolled sheets
Hot rolled strip
Cold rolled sheets
Cold rolled strip
ROLLED STEEL
FLOOR PLATE
A.W. ALGRIP
abrasive
A.W. SUPER
DIAMOND *Pattern*
COAL CHEMICALS
A.W. CUT NAILS
Standard &
Hardened
MINE PRODUCTS
Iron ore concentrates
Iron pouder
Crushed stone
Sand
COKE
Foundry, industrial & metallurgical
PENCO METAL
PRODUCTS DIVISION
Steel cabinets, lockers & shelving

DY-90

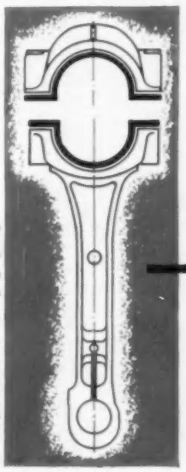


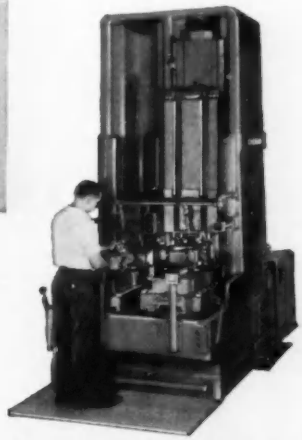
Complete Production Package *by Cincinnati*

Hydro-Broaches 290 sets of Parts per Hour

Caps and connecting rods for automotive engines are usually required in large volume, and those broached on the equipment illustrated here are no exception. To meet the production requirements of 580 parts per hour (290 sets) Cincinnati Application Engineers tooled up a No. 10-66 Duplex Vertical Hydro-Broach with two labor-aiding mechanically actuated automatic fixtures. Each holds one pair of parts—a cap and a rod. Clamping and unclamping are automatic . . . the operator is concerned only with positioning and removing the work. ¶ Several Hydro-Broach features contribute to the uniformly high production required for work of this type. Because of the alternating cutting cycles for the rams and tables, broaching is practically continuous; ways are hardened, ground and automatically lubricated for long productive life span; pre-set cycle control safeguards the operator. ¶ Our Application Engineers will give you the benefit of their experience in recommending and tooling up new CINCINNATI machines—milling or broaching—for the lowest cost production of your work. And if you're not familiar with the new CINCINNATI Duplex Vertical Hydro-Broach Machines with receding tables, write for literature.

THE CINCINNATI MILLING MACHINE CO.
CINCINNATI 9, OHIO





CINCINNATI No. 10-66 Duplex Vertical Hydro-Broach. Write for Catalog No. M-1848 which contains complete engineering specifications.

Drawing of connecting rod and cap broached on the All-Cincinnati equipment illustrated here:

Part name	Connecting rod and cap
Material	Steel forging
Operation	Broach half bore and parting face
Depth of cut	3/32"
Broaching speed	34 feet per minute
Production	580 parts (290 sets) per hour
Machine	CINCINNATI No. 10-66 Duplex Vertical Hydro-Broach

CINCINNATI

CINCINNATI

MILLING MACHINES • CUTTER SHARPENING MACHINES • BROACHING MACHINES • METAL FORMING MACHINES • FLAME HARDENING MACHINES OPTICAL PROJECTION PROFILE GRINDERS • CUTTING FLUID

this Verson TRANSMAT PRESS



is producing 1000 automotive air cleaner shells per hour automatically

In another cost cutting production process engineered by Verson, this 900-ton two-slide Transmat press completes 1000 air cleaner shells every hour without human handling. The intricate part is formed from coil stock in eight consecutive operations.

Verson Transmat Presses offer unusual economy and efficiency whenever four thousand or more pieces, requiring four or more operations, are produced per day. Essentially a single press with multiple die stations and separately adjustable slides, the Transmat transfers the work piece by mechanical fingers synchronized with the press action. Feeding can be from coil stock or blanks. Intermediate handling, pickling or annealing is unnecessary.

The Verson Transmat is more than a press . . . it is a production process that can substantially reduce unit costs on a wide variety of mass produced stampings. Whatever your requirements, however — from several hundred to many thousand stampings per day — we will be happy to recommend the production process best suited to your needs. For specific recommendations, send an outline of your production problem.

A Verson Press for every job from 60 tons up.

Verson

ORIGINATORS AND PIONEERS OF ALLSTEEL STAMPING PRESS CONSTRUCTION

VERSON ALLSTEEL PRESS CO.

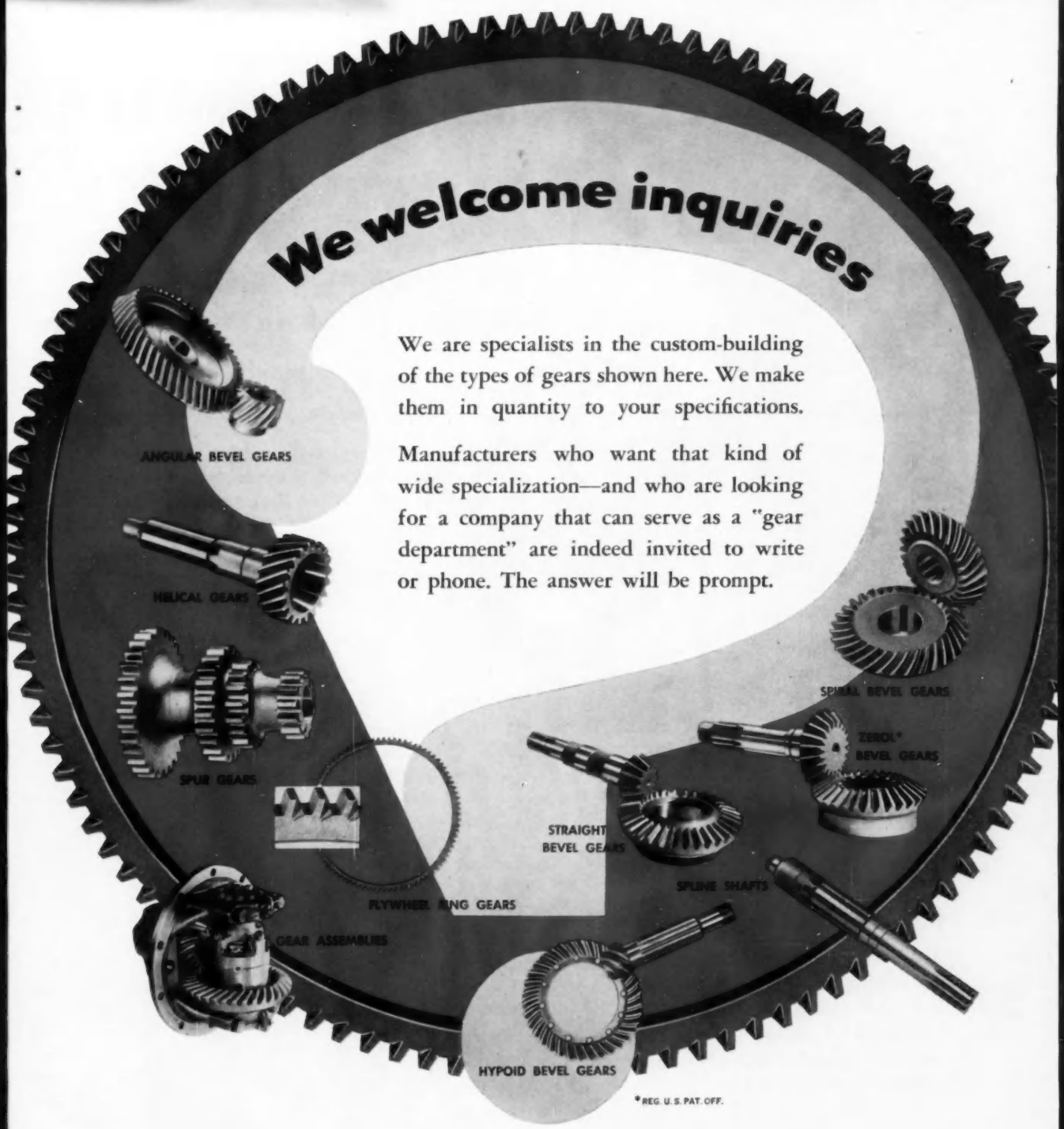
9307 S. KENWOOD AVENUE, CHICAGO 19, ILLINOIS • SO. LAMAR AT LEDBETTER DRIVE, DALLAS, TEXAS

MECHANICAL AND HYDRAULIC PRESSES AND PRESS BRAKES • TRANSMAT PRESSES • TOOLING • DIE CUSHIONS • VERSON-WHEELON HYDRAULIC PRESSES

We welcome inquiries

We are specialists in the custom-building of the types of gears shown here. We make them in quantity to your specifications.

Manufacturers who want that kind of wide specialization—and who are looking for a company that can serve as a "gear department" are indeed invited to write or phone. The answer will be prompt.



*REG. U.S. PAT. OFF.

DOUBLE DIAMOND GEARS

FOR AUTOMOTIVE, FARM EQUIPMENT AND GENERAL INDUSTRIAL APPLICATIONS
GEAR-MAKERS TO LEADING MANUFACTURERS

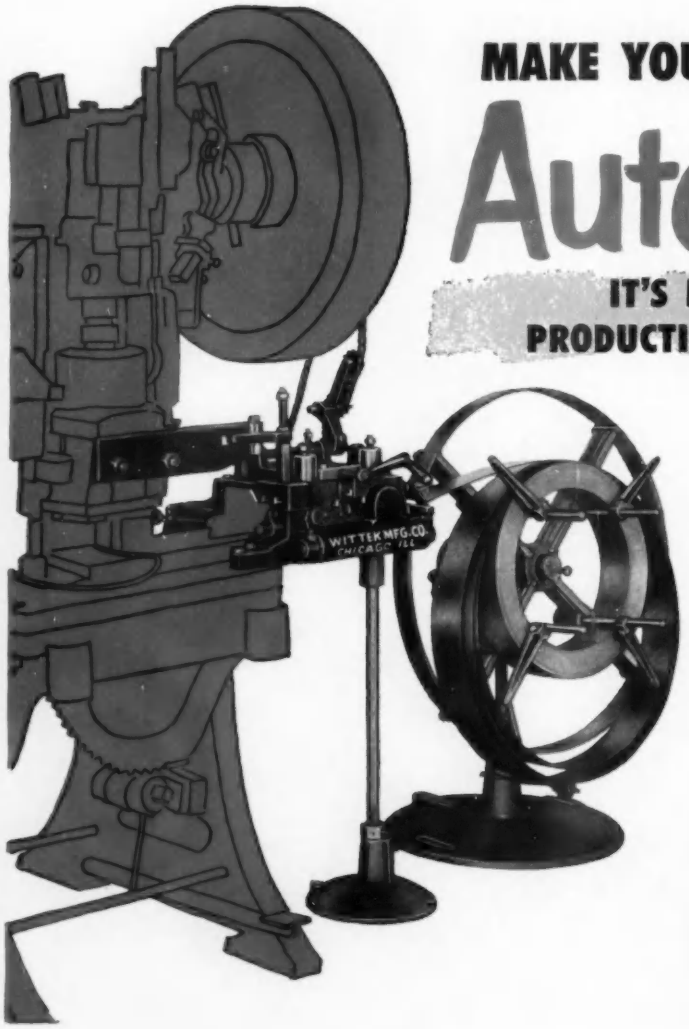
Automotive Gear Works, inc.

ESTABLISHED IN 1914

RICHMOND, INDIANA

MAKE YOUR PUNCH PRESSES Automatic

IT'S EASY WITH WITTEK PRODUCTION FEEDING EQUIPMENT



Roll Feeds and Reel Stands

Wittek automatic roll feeds assure an accurate feed (push or pull) of coiled material to any size or make of punch press. Standard units are available in a wide variety of models to fit all requirements. Simple adjustments permit quick change from one job to another.

Several sizes of Wittek reel stands accommodate a range of coil weights up to 800 pounds—with widths up to 12 inches. They facilitate the handling of coiled strip or wire for automatic feeding. Each reel can be adjusted to any angle and height.

Power-Driven Stock Straighteners

The Wittek stock straightener is a self-contained motor-driven unit for continuous straightening of coiled stock. It is used in conjunction with a reel stand and automatic feed for punch presses. An infinitely variable speed drive permits any desired straightening speed. The maximum width of stock handled on standard models is 12 inches.



Write for recommendations on Roll Feeds, Reel Stands, and Stock Straighteners to meet your requirements.

Production Feeding Equipment

WITTEK MANUFACTURING COMPANY

4319 West 24th Place • Chicago 23, Illinois

Design "Low Cost" Into YOUR Equipment

GITS

World's Largest Selection of Low-Cost Lubricating Devices

LUBRIKIT . . . An assortment of 95 oil cups of 29 different types. Gits sales records show these oilers are most used for replacement and maintenance. Contents of each separate bin are clearly described on Inside Cover.

Special Introductory Price
Just **$14.95** F.O.B. Factory
Satisfaction or your money back



CLIPS FOR ATTACHING TUBING

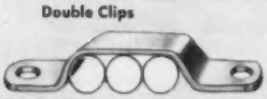
When ordering, specify ¼", ⅜" or ⅜" tubes. Style TF.



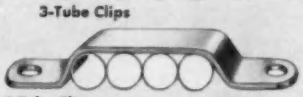
Single Clips



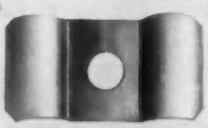
Double Clips



3-Tube Clips



4-Tube Clips



Double Clips — Wing Type



SIGHT GRAVITY FEED OILERS

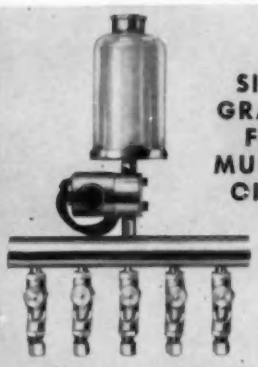
Rate of oil flow regulated by needle valve, directly observed through sight glass in stem.

Shut-off knob does not affect needle valve adjustment. Visible oil supply. Non-breakable. Tops in convenience and dependability, at low cost. Style NFU—No. 3602-A.



GEAR CASE GAUGES

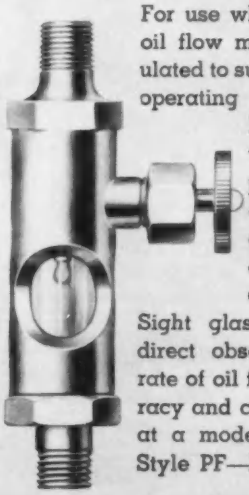
This oil gauge plug permits instant checking of oil level within a transmission or gear case. For use where construction permits insertion in tapped hole. A valuable addition to any such equipment — at very low cost. Style BW—No. 4042.



SIGHT GRAVITY FEED MULTIPLE OILERS

This one unit replaces 3 to 8 individual oilers. Maximum practicality in a small central lubrication system. Positive cut-off during idle periods. Individual vibration-proof needle valve adjustments. With solenoid control (Illustrated): Style MDS—No. 4685-A. Without solenoid: Style MD.

SIGHT GAUGES



For use where rate of oil flow must be regulated to suit changing operating conditions. Needle valve permits extremely accurate adjustment of oil feed. Sight glass provides direct observation of rate of oil flow. Accuracy and convenience at a moderate price. Style PF—No. 4290.

Don't price yourself out of the market. When you design proper lubrication into your equipment, specify GITS Lubricating Devices—the widest selection available anywhere. The items pictured above are only a few of our many thousands of lubricating devices. At the design stage, get the GITS story. Free Engineering Service. Send NOW for your free Catalog.

GITS BROS. MFG. CO.

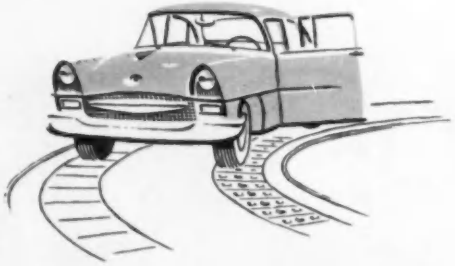
The Standard For Industry For Almost Half A Century

1870 South Kilbourn Avenue
Chicago 23, Illinois

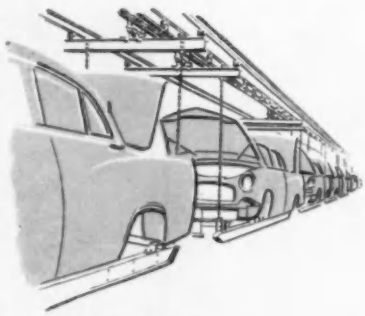
Clip this page for handy "rough reference"

we work with the world's finest

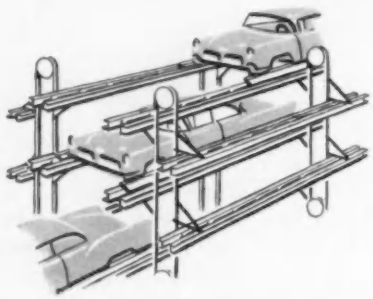
Automation Engineers...



Conveyor carrying completed automobile around 180° turn, automatically transferring between two parallel final assembly conveyors.



Overhead body assembly conveyor. Note balancing rails and unobstructed floor area.



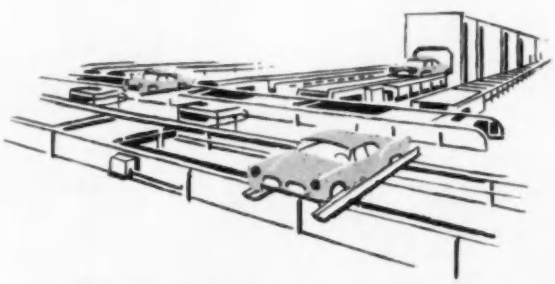
Lowerator automatically receives bodies on one floor, lowers them and discharges them on another floor.

For over a quarter of a century, we at Anchor Steel have been working with the finest automation engineers in the world . . . the men who actually conceived the production-line techniques that has brought the automotive industry to its present unparalleled efficiency.

And these men are never satisfied. Every day they are striving for better ways to do the job, automatically . . . to do it faster, more economically.

We have been privileged to work very closely with the automotive industry . . . from installing complete assembly plants to solving specific problems in the newest automation techniques.

Perhaps our experience can be of service to you . . . Just call us . . . a member of our engineering staff will be happy to discuss your ideas with you.



Distribution center that allows an inspector to dispatch a body automatically to any one of 12 paint conveyors.

568

ANCHOR STEEL AND CONVEYOR COMPANY

CONVEYORS

DESIGNERS AND MANUFACTURERS

6908 KINGSLEY AVENUE • DEARBORN, MICHIGAN

you are always sure of top quality with **ANCHOR** *conveying equipment*

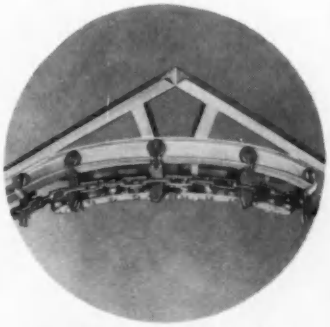
In sub-assemblies and replacement parts, ANCHOR'S wide engineering experience can render you a substantial service. Every conveyor part that ANCHOR makes stems from an intimate understanding of the engineering and maintenance needs of conveyor systems.

ANCHOR overhead conveyor components are interchangeable with most other leading makes, and are designed for simplicity of installation.

For the components to build a complete conveyor system or to extend or relocate your present system, contact us for a quotation.



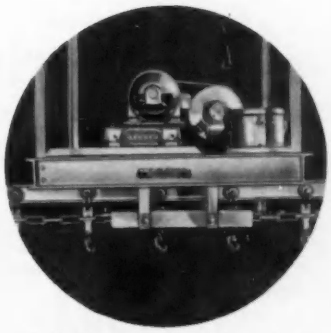
ANCHOR improved conveyor trolleys are interchangeable with other makes for replacement or extending existing conveyors.



ANCHOR anti-friction roller turns, completely assembled, ready to hang.



ANCHOR 4-wheel trolleys feature side guide rollers for easy pushing. Used with hoists, tool balancers, etc.



ANCHOR conveyor drives with ANCHOR overload Cut-Outs reduce down time. Available in many sizes and types.

56C

ANCHOR STEEL AND CONVEYOR COMPANY

CONVEYORS
DESIGNERS AND MANUFACTURERS

6908 KINGSLEY AVENUE · DEARBORN, MICHIGAN

CALENDAR

OF COMING SHOWS AND MEETINGS

SAE National Production Meeting and Forum, Hotel Statler, Cleveland, O. .....Mar. 19-21
Mobilgas Economy Run, Los Angeles to Colorado Springs..Mar. 19-21
ASTE Industrial Exposition, International Amphitheatre, Chicago, Ill. .....Mar. 19-23
AMA Special Manufacturing Conference, Hotel Statler, New York, N. Y. .....Mar. 26-28
ASLE Annual Meeting, William Penn Hotel, Pittsburgh, Pa..April 4-6
American Chemical Society, national meeting, Statler-Hilton Hotel, Dallas, Tex. .....April 8-13
SAE Aeronautic Meeting and Production Forum, and Aircraft Engineering Display, Hotel Statler, New York, N. Y...April 9-12
National Packaging Exposition, Convention Hall, Atlantic City, N. J. .....April 9-12
MPA Annual Meeting and Metal Powder Show, Hotel Cleveland, Cleveland, O. .....April 10-12
National Industrial Research Conference, Sherman Hotel, Chicago, Ill. .....April 18-19
National Petroleum Institute, semi-annual meeting, Cleveland Hotel, Cleveland, O. .....April 18-20
Tokyo Motor Show, Japan.....April 20-29
American Zinc Institute, annual meeting, Hotel Statler, St. Louis, Mo. .....April 23-24
Turin Motor Show, Italy..April 21-May 2
British Industries Fair, London and Birmingham, England..April 23-May 4
International Automobile Show, Coliseum, New York, N. Y. April 28-May 6
German Industries Fair, Hannover April 29-May 8
AFS Castings Congress and Show, Atlantic City, N. J. .....May 3-9
AWS Spring Meeting and Fourth Welding & Allied Industry Exposition, Buffalo, N. Y. .....May 8-11
Western Material Handling Conference and Equipment Show, Los Angeles, Calif. .....May 9-11
Mechanical Handling Exhibition and Convention, Earls Court, London, England .....May 9-19
Design Engineering Show, Convention Hall, Philadelphia, Pa..May 14-17
Automotive Advertisers Council, spring meeting, Homestead, Hot Springs, Va. .....May 22-26
National Fluid Power Association, spring meeting, Greenbrier, White Sulphur Springs, W. Va. May 28-30
Indianapolis 500-Mile Race .....May 30
AGMA Annual Meeting, Homestead, Hot Springs, Va. .....June 3-6
SAE Summer Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J. .....June 3-8
Material Handling Institute 1956 Exposition, Public Auditorium, Cleveland, O. .....June 5-8
ASQC Annual Convention, Palais du Commerce, Montreal, Canada .....June 6-8
Seventh National Plastics Exposition, Coliseum, New York, N. Y. June 11-15
ASTM Annual Meeting, Chalfonte-Haddon Hall, Atlantic City, N. J. .....June 17-22
International Machine Tool Exhibition, London, England..June 22-July 6

FORESIGHT



Planning for tomorrow • Producing for today!

Since the earliest days of the industry, Bendix foresight in product design and development has contributed materially to automotive progress.

For example, Bendix* power braking and power steering, two of the industry's most popular new car features, are the results of years of research and engineering by Bendix specialists in these important fields.

Today Bendix engineers are likewise busy planning and developing new and better products to meet the needs of the years ahead.

It is because of this foresight the automotive industry looks to Bendix for components that continue to lead in public acceptance and dependable performance.

*REG. U.S. PAT. OFF.

BENDIX PRODUCTS DIVISION **SOUTH BEND** INDIANA

Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.

TYPICAL EXAMPLES



Bendix Power Brakes



Bendix Power Steering

Bendix Products Division

Bendix AVIATION CORPORATION

BRAKES • POWER STEERING • POWER BRAKING • CONSTANT VELOCITY UNIVERSAL JOINTS • HYDRAULIC REMOTE CONTROLS

AUTOMOTIVE INDUSTRIES

March 15, 1956 Volume 114, No. 6

Table of Contents
1956 Statistical Issue

MOTOR VEHICLE SECTION

PRODUCTION (FACTORY SALES)

Passenger Cars
- In Units and Wholesale Value... 89
- By Months, by Years, 1950-1955 .. 90
- To Domestic and Foreign Markets 90
- By Makes, by Months, 1955-1954.. 91
- By Body Types, 1952-1955 91
- Station Wagons, 1952-1955 91
- Canadian, Units and Value 95

Trucks
- In Units and Wholesale Value ... 89
- By Months, including Buses 90
- With Diesel Engines 93
- By Special Types 93
- Ambulances 93
- Cab-Over Engine 93
- Multi-Stop 93
- To Domestic and Foreign Markets 90
- By Gross Vehicle Weights, 1955... 92
- By G.V.W., by Years 92
- Canadian, Units and Value 95

Buses
- Revenue, by Months, 1951-1955 ... 93
- By Type, 1947-1955 93
- School Bus Chassis, 1950-1955 ... 93

Trailers
- Shipments by Body Type 93
- In Units and Value, 1953-1955 ... 93

Tractors
- In Units and Value, 1949-1955 ... 94
- By Type and Hp, 1953-1955 94
- By Type and Fuel Used 168

NEW REGISTRATIONS

Passenger Cars
- By Makes, 1951-1955 96
- By Months, 1951-1955 97
- By Regions, 1952-1955 99
- By States, 1953-1955 97
- By Years, 1929-1955 100
- By Ranking Order, 1955 100
- By Dollar Volume, 1955 98
- By Price Classes, 1955 98
- By Makes, by States, 1955 98

Trucks
- By Makes, 1951-1955 96
- By Months, 1951-1955 97
- By States, 1953-1955 97
- By Makes, by G.V.W. 100

NEW REGISTRATIONS—*Continued*

Trucks, Continued
- By Years, 1929-1955 100
- By Ranking Order, 1955 100
- By Makes, by States, 1955 99
- By Regions, 1952-1955 99

DISTRIBUTION OUTLETS

Wholesalers
- By Years, 1930-1956 101
- By States 101

Car Dealers
- By Years, 1930-1956 101
- By States 101

Truck Dealers
- By Years, 1930-1956 101
- By States 101

Independent Repair Shops
- By Years, 1930-1956 101
- By States 101

CENSUS, 1954
- Automotive Retail Outlets 102
- Gasoline Filling Stations 102

TOTAL REGISTRATIONS

Passenger Cars
- By Years, 1900-1955 103
- By Continents 106
- By States, 1954-1955 104
- In the World, by Countries, 1954.. 106
- By Age Group, 1952-1955 107
- Scrappage 105
- By Makes, States, Model Year.108-117
- By Makes, by Model Year 116
- By Makes, by Rank 116
- On Farms, by States 117
- Canadian, by Provinces 95

Trucks
- By Years, 1900-1955 103
- By States, 1954-1955 104
- In the World, by Countries 106
- Scrappage 105
- By Age Groups, 1952-1955 107
- On Farms, by States 117
- By Makes, States, Model Year.118-127
- By Makes, by Model Year 126
- By Makes, by Rank 126
- Diesel, by States 127
- Canadian, by Provinces 95

TOTAL REGISTRATIONS—*Continued*

Buses
- By Continents 106
- By States, 1953-1952 104
- Diesel, by States 127
- In the World, by Countries 106
- Canadian, by Provinces 95

Taxicabs and Motorcycles
- By States, 1954-1955 105
- Tractors, on Farms 117

Trailers
- By States, 1955 105

Tractors
- On Farms, by States 117

EXPORTS

Passenger Cars
- In Units and Value, 1920-1955 128
- New and Used, 1953-1955 129

Trucks and Buses
- In Units and Value, 1920-1955 128
- New and Used, 1953-1955 129
- New, by G.V.W. 129

Parts and Equipment
- Value of, 1953-1955 129

Engines, Except Automotive
- In Units and Value 129
- By Hp Classifications 129

PRICES AND WEIGHTS

Passenger Cars
- By Makes and Body Type 131

ENGINE TRENDS, Passenger Car 130

SPECIFICATIONS, 1956

Passenger Cars
- Body Dimensions 132-133
- Chassis, Engine, Parts 134-149
- British Cars 150-151
- Other Foreign Cars 151-153

Trucks 154-161

Buses 162-163

Tractors, Farm and Non-Farm..164-168

Military Cargo Vehicles 169

(Continued on page 68)

Table of Contents—*continued*

AVIATION SECTION

PRODUCTION (SHIPMENTS)
- Aircraft, Civil
  - By Years, 1927-1955 235
  - By Months, Units and Value..... 235
  - By Hp and Places 236
  - By Airframe Weights 236
- Engines, Civil Aircraft
  - By Years, 1927-1955 235
  - By Months, Units and Value 235
  - By Total Engine Hp, 1950-1955 ... 236
- Propellers
  - Value of Shipments 249
- New Orders, Net Sales 253
- Backlog of Orders 252

REGISTRATIONS
- Aircraft, Civil
  - By Make, 1955 237
  - By Year of Manufacture 237

REGISTRATIONS—*Continued*
- By Years, 1927-1955 237
- Pilots, by Years 237
- By States, 1951-1955 238
- Airports
  - By Type, by States 238
  - Rank Order, by Operations 238

EMPLOYMENT
- Aircraft Engine Plants 236
- Aircraft Plants 236

SCHEDULED CARRIER OPERATIONS
- Aircraft in Service 239
- Number of Operators
  - Domestic Lines 239
- Route Mileage
  - Domestic Lines 239

SCHEDULED CARRIER OPERATIONS—*Continued*
- Operating Revenues
  - Domestic Lines 239
- Personnel Employed
  - Domestic Lines 239
- Payroll, Average Salary
  - Domestic Lines 239
  - International Lines 239

SPECIFICATIONS
- Engines
  - U. S. & British Gas Turbines..250-253
  - U. S. Reciprocating Type 248-249
- Aircraft
  - U. S. Rotary Wing 247
  - U. S. and Foreign—Military ..240-243
  - U. S. and Foreign—Civil 244-246

AUTOMOTIVE ENGINE SECTION

SPECIFICATIONS
- Engines
  - Gasoline 262-273
  - Diesel 274-281

SPECIFICATIONS—*Continued*
- Engines, Continued
  - Diesel, for Locomotive Use 283
  - Small Gasoline .....261 and 284

SPECIFICATIONS—*Continued*
- Engines, Continued
  - Outboard Motors 282-283

INDUSTRY ECONOMIC SECTION

SIGNIFICANT INDICATORS 323

FINANCE
- Federal Government
  - Receipts, Expenditures, Debt 324
- Purchasing Power of Dollar 324
- Corporate Profits 324
- U. S. Savings Bonds 324

POPULATION
- U. S., by States, July 1, 1955 325
- By Age Groups 325

THE LABOR FORCE
- Total Employment, by Months 326
- Employment by Sex, by Months ... 326
- Production Workers, by Industries. 326
- Federal Civilian Employment 326

INDUSTRIAL PRODUCTION
- Index of 327
- Manufacturers' Sales, Inventories.. 327

WAGES
- Earnings of Production Workers
  - By Months, by Years 328

COST OF LIVING
- Index of 329
- Wholesale Prices of Commodities.. 329

MACHINE TOOLS
- Index of New Orders 330
- Value of Shipments, by Years 330
- Index of Shipments 330
- Index of Foreign Orders 330

MATERIALS
- Rubber
  - Production, Consumption, Stocks of Synthetic 331
  - Consumption of Natural, Synthetic 331

MATERIALS—*Continued*
- Steel
  - Production by Grades 332
  - Ingot Production 332
  - Shipments of, by Markets 332
  - Distribution of Carbon, Alloy and Stainless 332
- Nonferrous Castings 333
- Magnesium Mill Products 333
- Aluminum Mill Products 333
- Tin Production, Consumption 333

SPECIFICATIONS
- Industrial Trucks
  - Powered High-Lift 334-341
  - Powered Low-Lift 342-343
  - Powered Non-Lift 341
  - Towing Tractors 343-344

SPECIAL AND REGULAR FEATURES

Calendar of Coming Events 65
News of the Automotive and Aviation Industries 71
Men in the News 77
FWD's 1956 Line of COE Trucks 170
Automatic Transmission Markets ... 183
Monroe Air Hydraulic Suspension ... 229
Heavy-Duty Tandem Drives 230
Torque Converter Housing Grinding. 231
Stainless Steel Trim Tonnage 232
New American Motors V-8 Engine .. 285
Directory of Manufacturers 286
Turmo 600 Shaft Turbine 287
Lycoming Gas Turbine Engine 288
Diesel Fuel Injection Pump 289
New Plant and Production Equipment 368
Free Literature and Information 371
New Products 374
Airbriefs 378
The Business Pulse 380
Turbojet Engine Symposium 382
French VTO Equipment Tested 384
News of the Machinery Industries .. 440
New Defense Facilities 454
More Government Contract Awards.. 458
Development of a New Alloy 464
Shorties 474
On Our Washington Wire 478
German Automobile Output Soars ... 480
API Meeting Discusses Lubricants.. 546
Advertisers' Index 568-569



BENDIX POWER BRAKES ARE A PERFORMANCE-PROVEN SALES FEATURE

Bendix

POWER BRAKES

First in the field - now standard of the industry!

The first practical power brake to be put on the market was developed and produced by Bendix. Today Bendix* Power Brakes are specified by practically every car manufacturer in the industry.

This industry-wide acceptance of the most revolutionary development in braking since Bendix four-wheel brakes is convincing evidence of Bendix foresight in research and engineering. And the fact that today more Bendix Power Brakes are in use than all other makes combined demonstrates conclusively the ability of Bendix to *produce* as well as to *plan ahead* for the industry's requirements.

Available in low pedal or high pedal designs to meet individual manufacturers' requirements, Bendix Power Brakes are a potent source of customer good will from the first mile to trade-in time.

BENDIX PRODUCTS DIVISION SOUTH BEND INDIANA

Export Sales and Service: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.

*REG. U. S. PAT. OFF.

BRAKES • POWER STEERING • POWER BRAKING
• CONSTANT VELOCITY UNIVERSAL JOINTS
• HYDRAULIC REMOTE CONTROLS

Bendix Products Division

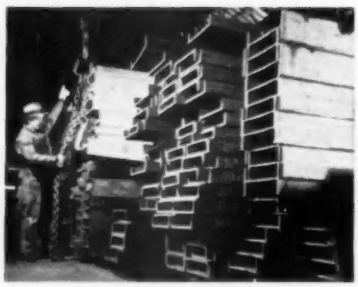
Bendix AVIATION CORPORATION

STEEL BUYERS GUIDE to Ryerson Products and Services

You can draw on your nearby Ryerson plant for an almost endless number of products and services—and the more you concentrate your purchases at one source, the more you save. Ryerson products not pictured here include: Re-bars, expanded metal, grating, plastic pipe, machinery and tools, etc. See your Ryerson catalog for complete list and write for descriptive literature.



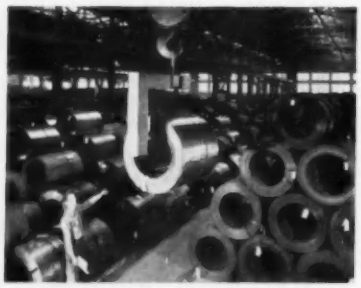
BARS—The most complete range of types, shapes and sizes as well as the largest tonnage.



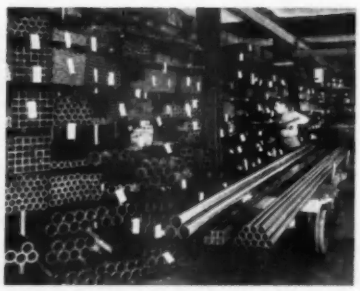
STRUCTURALS — I-beams, H-beams, channels, angles, tees and zees—all to ASTM spec. A-7.



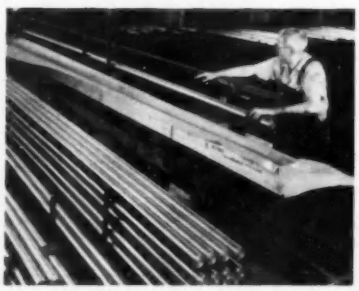
PLATES—14 types including special low carbon plates for forming and welding, leaded E-Z-Cut, etc.



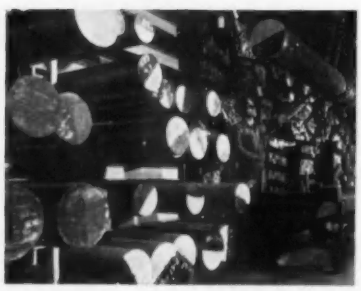
SHEETS & STRIP—More than 20 different types in pattern sizes, cut-to-order sizes, strip coils, etc.



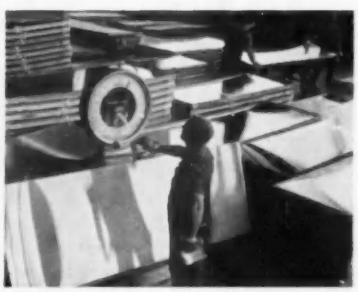
TUBING—Seamless and welded mechanical tubing, fluid power tubing, structural and boiler tubes, etc.



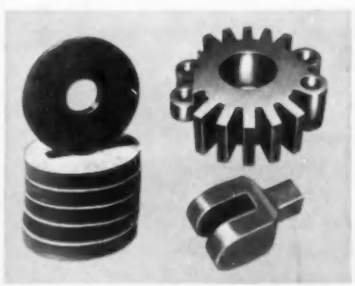
C. F. BARS—Cold finished steel for every use: screw steel, Ledloy, accuracy stock, machinery steel, shafting, etc.



ALLOYS—Every type including leaded alloys for fastest machining, all performance-proved by tests.



STAINLESS—Allegheny stainless in over 2,221 sizes, shapes, types, finishes: sheets, plates, bars, pipe, etc.



FLAME CUTTING—Almost any shape quickly cut from strong rolled steel—one or hundreds all alike.

RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT: NEW YORK • BOSTON • WALLINGFORD, CONN. • PHILADELPHIA • CHARLOTTE, N. C. • CINCINNATI CLEVELAND • DETROIT • PITTSBURGH • BUFFALO • CHICAGO • MILWAUKEE • ST. LOUIS • LOS ANGELES • SAN FRANCISCO • SPOKANE • SEATTLE

News of the AUTOMOTIVE AND AVIATION INDUSTRIES

Vol. 114, No. 6 March 15, 1956

Ford Report, Due This Month, Will Show Record Sales, Net

Ford's annual report for 1955, to be released at the end of this month (March), will show that sales, earnings, production, and employment were at an all-time high. Preliminary figures indicate a net income of $437 million, 92 per cent higher than 1954; total sales topped $5.5 billion, an increase of 38 per cent.

Domestic vehicle production during 1955 climbed by 31 per cent to 2,614,558 units. Ford last year paid out more than $1.11 billion in salaries to an average number of 181,616 employes. In 1954 Ford's payroll totaled slightly above $964 million and average employment numbered 171,019 persons.

On December 31, 1955, Ford's net worth was $1.86 billion, about $274.9 million higher than at the same time a year earlier. Total assets climbed by nearly $500 million to $2.58 billion. Ford paid out more than $531 million in taxes last year, nearly double those of the previous year.

Oldsmobile Station Wagon Is Readied for 1957 Line

Oldsmobile will add a station wagon to its line in 1957. The bodies will be built by Ionia Manufacturing Co. at Ionia, Mich., which already has the steel work up for a new plant to build the bodies.

Nash Lays Plans to Build Automobiles in Colombia

The South American market continues to interest U. S. automobile companies. Nash is planning to set up a car manufacturing facility in Colombia, fourth largest South American country in vehicle population.

The division already has signed a contract with Productora Nacional de Automotores, S. A., to set up a facility in Bogota. It will be that country's first automobile plant.

Under the contract, Nash will ship the components to the Colombian company, which will assemble and market the cars. The new company, capitalized at $1.25 million, will have an annual production capacity of 3000 cars. It is expected to be completed late this year.



NOVEL AIRCRAFT INCORPORATES RUBBER COMPONENTS

This light plane of rubberized Airmat fabric made rigid by air pressure is shown aloft during recent flight tests. Developed by Goodyear Aircraft Corp., the wing, tail assemblies, and pilot's seat are made of the material, while conical-shaped fuselage is made of airship fabric. The experimental craft is powered by a two-stroke, 40-hp engine.

Most '57 Cars Not Expected Until October and November

Automobile companies and dealers are concerned about loose talk of early introduction dates for 1957 models. Some reports hint new offerings will come as early as mid-summer. Such rumors, of course, can hurt sales of 1956 cars by encouraging prospective buyers to wait for new models.

A check reveals that nearly all companies plan October and November announcements. One or two models, however, without completely new bodies may appear in September.

Mercury to Build Facility For Station Wagon Bodies

Due to an expected continued growth in station wagon sales, Mercury this year will construct a plant devoted exclusively to building bodies for the utility vehicles. To be located near the division's assembly plant in Wayne, Mich., the new plant will have the capacity to turn out 250 station wagon bodies a day.

Scheduled to go into production this year, the plant will contain some 352,000 sq ft of floor area. It will have complete body, paint and trim shops. The finished bodies will be shipped to Mercury assembly plants around the country.

Tung-Sol Sets New Records In 1955 Sales and Earnings

Net sales of Tung-Sol Electric, Inc., for 1955 were $51.114 million, a gain of more than 30 per cent over net sales of $39,052,458 in 1954. Net earnings were $3,239,393, nearly 56 per cent higher than the $2,077,062 recorded in 1954.

News of the AUTOMOTIVE



GIANT MACHINE RECOVERS STRANDED LANDING CRAFT

The landing craft retriever is an intricate arrangement of hoist, wheels and engineering power which straddles a crippled vessel and lifts it from the water. Engineered and constructed by R. G. LeTourneau, Inc., for the Army Transportation Corps. the 101-ton machine is a four-wheeled, Diesel-electric, self-propelled unit and has successfully operated in water to a depth of eight ft during extensive trial tests.

Chrysler Given Big Part In New Missile Program

Chrysler Corp. will be one of the companies to share in the Government's expanded missile program. Under its latest Army-Navy contract, Chrysler will be responsible for the engineering and development of a system for a proposed ship-launched ballistic missile.

The "system" includes elements needed to handle and launch the missile, such as transportation, ground supporting equipment, shipboard adaptation, and firing and guiding controls. The work will be carried out at the Army's Redstone Arsenal at Huntsville, Ala.

Chevrolet Air Conditioner Ready for V-8's or Sixes

Chevrolet is offering a new air conditioner as a dealer-installed accessory on both V-8 and six-cylinder car models. Up until now, the division has made available only one type of cooling unit adaptable only to V-8 models and installed at the factory. It will continue to offer the factory-installed unit for V-8's.

The new air conditioner is basically the same as the one Chevrolet introduced last year, except that it is more compact. All components are located under the hood. Priced at from $400 to $425 (excluding installation charges), the new model is available in three types—one with a built-in heater, another without a heater, and a third for a car already equipped with a heater.

The new unit is made by Harrison Radiator Div. The factory-installed model is made by Frigidaire Div.

Willys Sales Last Year Up 31 Per Cent Over '54

Sales of commercial vehicles by Willys continue upward. Strengthened by an expanded dealer organization, the company last year sold 31 per cent more vehicles on the domestic market than in 1954.

Biggest gains were made by the four-wheel drive Jeep, whose sales climbed by more than 40 per cent. Trucks registered a gain of about 35 per cent, while station wagon sales rose by 38.5 per cent.

Hupp Pays $5.76 Million For Gibson Refrigerator

Hupp Corp., which has been diversifying into the appliance field in the past several years, has acquired Gibson Refrigerator Co., Greenville, Mich., for a reported $5.76 million. The Gibson concern last year had sales totalling $36 million.

Cast Crankshaft Is Adopted By Pontiac for V-8 Engines

Pontiac has the distinction of being the first General Motors car division to adopt a cast crankshaft in its V-8 engines. This announcement signalizes 100 per cent use of cast crankshafts in 1956 production. Pontiac began to use these crankshafts in small volume toward the end of last year and was equipping approximately 50 per cent of its engines with them during January.

The crankshafts are of a pearlitic malleable composition known as Shell Cast Arma Steel. Complete details of the highly mechanized shell molding process used to produce them will be published in an early issue of AUTOMOTIVE INDUSTRIES.

According to Pontiac, the cast crankshafts offer many attractive advantages in manufacturing. The metal has better machinability characteristics, as well as less chip removal due to the closer limits made possible by precision casting methods. Drilling of oil holes is said to be simpler and quicker and does not require the step-by-step sensitive drilling of forgings. Cheeking has been eliminated to make simplification of the initial turning operations possible.

Ford Extends Power Options To Other Models in Its Line

Ford now is offering a special 225-hp Thunderbird engine in its Fairlane and station wagon models. It is also extending the 202-hp power plant to the lower-priced Mainline and Customline series. Both engines with four-barrel carburetors are being made available at about $30 above the prices of the standard engines offered in those models.

Auto-Lite To Enlarge Sarnia, Ont., Plant

Electric Auto-Lite Co. will increase manufacturing space at its Sarnia, Ont., plant by more than 75 per cent with a $2.5 million addition. Production lines at the present 180,000 sq ft plant also will be rearranged for production of automotive electric equipment.

AND AVIATION INDUSTRIES



NORTHROP TEST FURNACE

This stabilized temperature oven is being used by scientists at Northrop Aircraft, Inc., to probe the mysteries of the thermal barrier. Conduction heat supplies necessary temperatures. A tapered skin segment is shown being installed for thermal stress tests. Distortion of the part by applied heat is indicated by strain gages.

Police Car and Cab Equipment Options Offered by Studebaker

Studebaker now is offering taxicabs and police cars with special equipment usually required in such vehicles. Included is a modified V-8 engine for the latter which can develop 210-hp.

Two engines offered on the cabs are an improved 101-hp, heavy-duty, six-cylinder engine for the Champion Custom four-door model and a 170-hp, V-8 power plant for the Commander Custom four-door.

Heavy-duty shock absorbers and springs are standard on the cabs. An extra capacity generator and other special equipment are offered as options on both the cabs and police cars.

Other Developments Expected To Precede Gas Turbine Usage

Higher compression ratios, fuel injection systems, and much broader use of lightweight parts will be seen in automobile engines before the gas turbine is widely adopted, according to E. N. Cole, chief engineer of Chevrolet. He elaborates on the last point with the further statement that aluminum can be formed into intricate die castings and forgings not now possible with materials generally used.

AI TABLOID

Muskegon Piston Ring Co. has acquired Rotary Seal Co. . . . Evans Products Co. plans to take over control of Chapman Manufacturing Co.

* * *

Firestone Tire & Rubber Co. predicts that air springs, made of rubberized nylon fabric forming cushions of compressed air, will be used on passenger cars within the next year or two.

* * *

Tractor and Implement Div. of Ford Motor Co. has announced that power steering will be factory-installed as standard equipment at no extra cost on its tricycle tractors.

* * *

Austin Motor Export Corp. has disclosed the conclusion of agreements that will enable its cars and light commercial trucks to be assembled in the Philippines.

* * *

Studebaker-Packard Corp. has broadened the use of its non-slip differential to medium-priced Clipper cars.

* * *

Electric Auto-Lite Co. has launched a $500 million project at Bay City, Mich. Objective is to provide its plant there with facilities to produce stamped aluminum automobile grilles and trim.

* * *

Bohn Aluminum & Brass Corp. has acquired the assets of Betz Corp., producer of heat transfer equipment.

* * *

Boeing Airplane Co. will spend an estimated $73.5 million in the next three years for additions to its plants and equipment.

* * *

Headquarters of the newly formed Salt Bath Institute are located at 7307 Euclid Ave., Cleveland, O.

Bendix Aviation Corp. has developed a transistorized automatic flight system for American Airlines' new fleet of Lockheed-Electra 400-mph airliners.

* * *

Mercury Div. of Ford Motor Co. will erect a passenger car assembly plant at Rosemead, Calif. Expected to cost $40 million, it will have a total area of 1.4 million sq ft.

* * *

Vickers, Inc. has announced completion of a new 150,000 sq ft administrative and engineering center in suburban Detroit. . . . Wayne Pump Co. has opened its new plant at Salisbury, Md.

* * *

Massey-Harris-Ferguson, Inc., has established a new Industrial Div. to market a full line of light and medium-duty industrial wheel tractors and allied equipment.

* * *

Link Belt Co. has moved its offices to Prudential Plaza, Chicago 1, Ill.

* * *

Reynolds Metals Co. has announced a $43 million expansion program to increase production of alumina and to expand its aluminum sheet rolling facilities.

* * *

Allegheny Ludlum Steel Corp. plans to spend about $30 million over the next two years to expand its production of stainless, electrical, and other high alloy steels.

* * *

Rolls-Royce is now working on the development of atomic aircraft engines.

* * *

Heckethorn Mfg. & Supply Co. plans to build a $1 million automotive products manufacturing facility in Tennessee. . . . Standard Products Co. is constructing a new plant at Fullerton, Calif.

(Turn to page 486, please)

News of the AUTOMOTIVE



RUBBER-TIRED SWITCH ENGINE CLIMBS OVER RAILS

Shown demonstrating its versatility is a new switch engine built for the Penna. R.R. by LeTourneau-Westinghouse Co. Called the SwitchMobile, it is powered by a GM six-cylinder, two-stroke Diesel engine; output is 208 bhp at 2000 rpm, and maximum torque is 585 lb ft at 1250 rpm. Engine bore is 4.5 in.; stroke, 5 in.; and displacement, 425 cu in. The machine has a constant mesh, four-speed transmission with torque converter and can develop about 30,000 lb ft of tractive effort, according to the manufacturer.

AMC Selects Names For New V-8 Models

Nash and Hudson will call the forthcoming new V-8 models in their lines the Ambassador Special and the Hornet Special. The Statesman and Wasp names will be retained for the present, but only for the six-cylinder lines.

The new AMC V-8 is designed to allow for a considerable increase in displacement. It probably will be increased substantially from its current 250 cu in. size to go into the large Hornet and Ambassador lines. AMC's current commitment to buy Packard V-8 engines and Ultramatic transmissions runs out late this year.

Second Best January Set In Motor Vehicle Sales

Official figures, compiled by the Automobile Manufacturers Association, show factory sales of motor vehicles in January totaled 690,253 units, compared with a record 725,379 in January of 1955. Although this was a marked drop from last year, January still wound up as the second best first month, despite sharp production cutbacks by the industry.

The January total included 591,032 passenger cars and 99,221 trucks and coaches. Although the February total will not come anywhere near the 744,942 vehicles produced in February 1955, it is still expected to be the second best on record.

Control of Motor Products Transferred to New Group

A new group has taken over control of Motor Products Corp., Detroit automobile parts and appliance manufacturer. Made up of New York and Chicago interests, the group acquired control of the 40-year-old company through purchase of Motor Products stock in the open market during the last several months.

Among the Chicago members of the group are Arnold H. Maremont, president of Maremont Automotive Products, Inc., and Victor Nemeroff, president of H & B American Machine Co., Inc., who together have acquired a number of concerns in recent years. The new group will control five of the nine Motor Products board seats.

Chrysler's Market Share Rises to 17.5 Per Cent

Although Chrysler Corp. last year failed to reach its goal to capture at least 20 per cent of total automobile industry sales, it has been making steady gains since the beginning of the year. Through February 27, the corporation held 17.5 per cent of the car market. This compares with 17.1 per cent for 1955.

Veteran Correspondent Retires After Half Century of Service

W. F. Bradley, who closes out a distinguished career covering 52 years in the service of AUTOMOTIVE INDUSTRIES and its predecessor *The Automobile*, has announced his retirement as AI European correspondent. His name is familiar to all readers of the magazine for his concise reporting of the latest automotive developments on the Continent.

Aside from his work as a correspondent, Mr. Bradley has been active throughout his 80 years in many other fields. For example, in 1914 he managed the French team that captured first, second, and third places at the Indianapolis Race. In 1935, he directed G. E. T. Eyston in the latter's successful attempts on world's speed records at the Utah Salt Flats. His interest in this activity is recorded in a book he authored entitled "Speed on Salt."

Mr. Bradley plans to spend his retirement in South Africa and Europe. His position as AI European correspondent will be filled by Robert Braunschweig of Bern, Switzerland. Mr. Braunschweig is widely versed and well known in European automotive circles.

Clark Equipment Sales, Net Hit Peak During '55

Clark Equipment Co. enjoyed record earnings last year, of $9.5 million. The net compares with $5.7 million in the previous year.

Sales also climbed to a new high in topping $150 million, approximately 50 per cent above 1954. The Automotive Div. accounted for $44 million of the total.

AND AVIATION INDUSTRIES

"Phantom Freight" Clamor Is Quelled by Big Three

"Phantom freight" and uniform pricing of automobiles throughout the nation appears to be a reasonably dead issue. The Big Three automobile manufacturers have adjusted their freight rates to approximate cost, and General Motors flatly says that the move eliminates so-called "phantom freights."

This indicates that no further adjustments are probably contemplated, although there are still price differentials between points near the factory and those farthest away. The spread, however, is greatly reduced under the latest adjustments, the second within 18 months. "Phantom freight" charges have been one of the major issues in the current congressional investigation of marketing practices in the automobile industry.

Destination Charges Cut

Ford was the first to announce reductions in destination charges made to its dealers. General Motors and Chrysler followed shortly afterward.

Ford's reductions range from zero in Detroit and Chicago to $63 on Lincolns shipped to Houston, Tex. GM slashes range from zero in Detroit to $72 on a Cadillac shipped to Denver; the only reduction made by GM in freight rates to Chicago was on the Pontiac, which were cut by $2.00.

Destination charges on Chrysler Corp. passenger cars delivered beyond approximately 250 miles from Detroit were reduced in varying amounts. They range from $53 on the Plymouth to $74 on the Chrysler New Yorker and Imperial.

Wholesale Prices Raised

At the same time, however, all three companies raised the wholesale prices on cars and trucks. Ford Motor Co.'s boosts range from $16 on the Ford car line to $30 on Ford trucks. GM increased wholesale prices from $23 on Chevrolets to $36 on Cadillacs. Chrysler wholesale prices to dealers were increased from $22.75 on the Plymouth to $35 on the Chrysler New Yorker and Imperial.

CAR PRODUCTION FOR FIRST TWO MONTHS EXCEEDS ALL YEARS EXCEPT 1955

1956 Passenger Car Production

As reported direct to Automotive Industries by the car factories

Makes	February 1956	January 1956	February 1955	Two Months 1956	Two Months 1955
Hudson	4,463	4,669	6,113	9,132	9,112
Nash	9,073	10,330	9,892	19,403	14,164
Total—American Motors	13,536	14,999	15,805	28,535	23,276
Chrysler	11,330	13,275	17,063	24,605	34,533
De Soto	9,757	11,079	14,007	20,836	27,476
Dodge	14,893	21,322	31,392	36,215	64,189
Plymouth	38,954	54,155	68,068	93,109	132,114
Total—Chrysler Motors	74,934	99,831	130,530	174,765	258,312
Continental	260	373		633	
Ford	111,156	127,783	137,175	238,939	280,936
Lincoln	4,956	5,751	3,709	10,707	6,615
Mercury	21,516	22,937	34,871	44,453	67,254
Total—Ford Motors	137,888	156,844	175,755	294,732	354,805
Buick	62,841	67,095	64,117	129,936	126,544
Cadillac	14,220	14,196	13,497	28,416	27,632
Chevrolet	152,664	151,678	153,494	304,342	308,011
Oldsmobile	50,447	50,166	50,257	100,613	98,673
Pontiac	38,208	38,236	49,602	76,444	97,602
Total—General Motors	318,380	321,371	330,967	639,751	658,462
Packard	220	3,793	6,230	4,013	11,223
Studebaker	9,739	14,352	14,912	24,091	26,708
Total—Stude.-Pack. Corp.	9,959	18,145	21,142	28,104	37,931
Total—All Makes	554,697	611,190	674,199	1,165,887	1,332,786

Although the changes are designed to equalize freight rates all over the country, car dealers located from 1000 to 1500 miles from the Detroit area will derive the most benefit from the new price structure. Dealers who did not realize any reductions in freight rates could pass on the wholesale price increase to customers if they desired. It is unlikely they will do so, however, in view of the current competitive market.

Dealers Come Out Ahead

Recent changes made in dealer contracts reportedly will more than offset the increases in wholesale prices. Some of the concessions granted actually will reduce dealers' operating costs.

New GM contracts, for example, provide that the factory will assume full cost of warranty adjustments and direct mail expenses and double the allowance under its parts obsolescence plan. Several other provisos also benefit the dealer.

Ford also has provided many new concessions, including rebates on new cars sold and lower advertising charges for dealers. By the same token, Chrysler Corp. likewise made several changes in contracts in favor of dealers.

Volkswagen Sells N. J. Plant To Okonite for $4.2 Million

Volkswagen has sold the New Jersey plant, in which it planned to produce cars for the U. S. market, to Okonite Co., Passaic, N. J., for a reported $4.2 million. The former bought the 430,000 sq ft plant from Studebaker last year for $4 million.

Volkswagen abandoned its plans to turn out cars here when serious doubts arose as to its ability to do so at a profit (see AI, Feb. 1, p. 39).

Okonite is a manufacturer of electrical wire cable and splicing material.

Continued on Page 85

FACTS

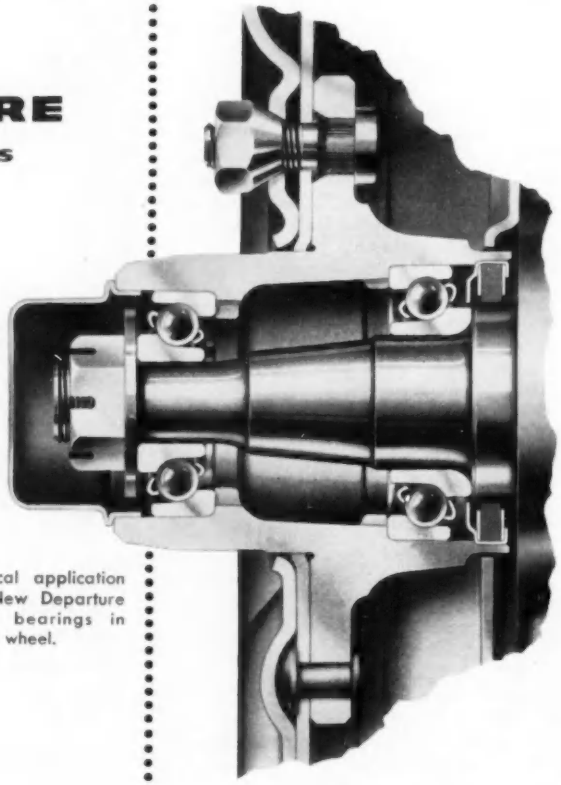
about



NEW DEPARTURE
BALL BEARINGS

FRONT WHEEL BALL BEARINGS HELP CUT PRODUCTION COSTS... INCREASE CAR DEPENDABILITY!

New Departure front wheel ball bearings give car manufacturers proven dependability and the economy of easier, faster assembly. More than 200 million front wheel bearings prove that *ball bearings* are the most efficient for resisting thrust and radial loads . . . for performing at all speeds with minimum friction or wear. And, because New Departures need practically no attention for lubrication or adjustment in service, they mean maximum economy to car owners. From drawing board to customer . . . depend on New Departure ball bearings and bearing engineering service for lasting satisfaction.



Typical application of New Departure ball bearings in front wheel.



New Departure angular-contact front wheel bearings withstand rugged radial, thrust, and shock loads year after year without need for adjustment. No lubricant required in space between bearings.

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

Men in the News



Clearing Machine Corp.—David D. Wallace was named a vice-president.

Holley Carburetor Co.—**John R. Nyland** and **B. R. Tabbert** were named assistant automotive sales managers, while **H. W. Noble** was made manager of the Truck Sales Dept.

National Motor Bearing Co., Inc., Industrial Div.—**William S. Forrest** was named manager.

Yale & Towne Manufacturing Co., Materials Handling Div.—**Carl O. Hedner** has been named assistant general sales manager.

Kaiser Aluminum & Chemical Corp. —**Samuel G. Wagner** has been named manager of industry sales, and **Dan R. Cheyney** was made manager of market development.

American Motors Corp. — **Richard T. Purdy** was elected vice-president in charge of automotive export.

Rheem Manufacturing Co.—**Donald L. Rheem** has been elected chairman of the board, and **A. L. Walker** has been elected executive vice-president.

Bohn Aluminum & Brass Corp.— **M. R. Westover** is now assistant to the executive vice-president.

Kurt Orban Co., Inc.—**Erich Gobien** has been made general methods engineer.

Ford Motor Co.—**Elvin W. Day** has been named plant manager of the new aluminum castings plant to be constructed near Sheffield, Ala.

Wagner Brothers, Inc.—**John E. Hunt** has been elected vice-president.

Soreng Div., Controls Corp. of America—**Donald M. Strathearn, Jr.,** has been appointed vice-president and director of engineering.

Minneapolis - Honeywell Regulator Co.—**Clarence W. Spangle** was named general manager of the Honeywell G.m.b.H., German subsidiary.

Amherst Manufacturing Corp. — **William J. Burns** has been elected vice-president in charge of finance.



E. W. Bliss Co.—Howard U. Herrick has been elected chairman of the board, and Robert Potter has been chosen to succeed him as president.

Dodge Div., Chrysler Corp.—**Harlan C. Graves** was appointed national fleet sales manager for cars and trucks, and **B. W. Bogan** was named executive engineer.

United Manufacturing Co.—**E. Walter Hammer, Jr.,** has been named chief engineer.

Wilkening Manufacturing Co. — **Samuel R. Gilbert, Jr.,** has been named personnel manager and chief industrial engineer.



Chambersburg Engineering Co. — Eugene C. Clarke, Jr., has been elected president, succeeding his father, who remains on the board of directors.

Robertshaw-Fulton Controls Co., Fulton Sylphon Div.—**George L. Ogdin, Jr.,** has been made general sales manager.

La Salle Steel Co.—**George W. Evens** has been appointed works manager.

Dana Corp.—**Richard E. Woodcock** has been named manager of the Auburn, Ind., plant.

Clark Equipment Co. — **Richard J. Donnelly** has been named manager of labor relations.

Rycenga Manufacturing Co.—**William B. Willis** has been appointed sales manager.

DeLuxe Products Corp.—**Robert K. Ruland** has been elected vice-president and general sales manager, and **Harold Parker** has been elected vice-president and plant manager.



Wales-Strippit Corp. — Merrill C. Wilcox has been appointed advertising manager.

Ford Motor Co.—**Burton C. Erickson** was named executive engineer of Special Products production product engineering; **Jerome J. Felts,** executive engineer of Mercury advanced car engineering; **Sidney L. Freers,** executive engineer of Special Products advanced engineering; **John L. Hooven,** executive engineer of Ford advanced car and truck engineering; **George H. Muller,** executive engineer of Mercury car engineering; and **Wilbur J. Sherrin,** executive engineer of Ford car and truck production product engineering.

Stauffer Chemical Co.—**Sam Emison** has been appointed director of industrial chemical sales.

Consolidated Electrodynamics Corp. —**John P. Moffat, Jr.,** has been named assistant director of quality control.

Consolidated Diesel Electric Corp. —**Maj. Gen. Lucas V. Bean** (USAF Ret.) has been elected vice-president in charge of export.

Goodyear Tire & Rubber Co., Industrial Products Div.—**J. W. Smith** has been appointed Eastern sales manager.

Ford Motor Co. of Canada—**J. M. Cochrane** has been appointed a director and vice-president.

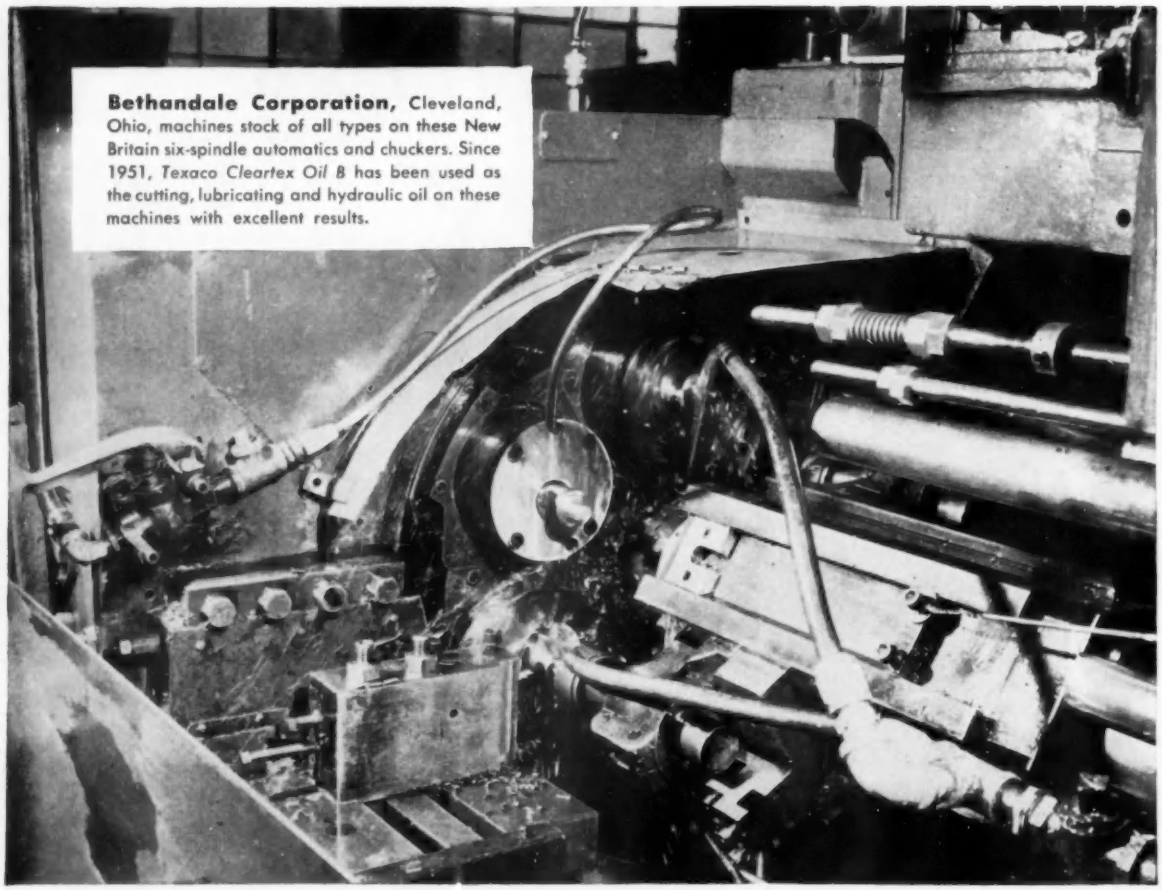
Acme Steel Co.—**Alfred M. Goodman** has been named supervisor of quality control.

Producto Machine Co.—**David W. Myers** has been appointed vice-president.

American Motors Corp.—**Earl F. Warner** was named an assistant works manager at the Kenosha plant.

Plymouth Div., Chrysler Corp.— **John H. Powell** is now operating manager of the Evansville, Ind., assembly and body plants.

Continued on Page 79



Bethandale Corporation, Cleveland, Ohio, machines stock of all types on these New Britain six-spindle automatics and chuckers. Since 1951, *Texaco Cleartex Oil B* has been used as the cutting, lubricating and hydraulic oil on these machines with excellent results.

"We put our stock in Texaco"

Bethandale Corporation, Cleveland, Ohio

THIS JOB SHOP performs a wide variety of cutting operations on all types of steel and non-ferrous materials. Four years ago, they began using *Texaco Cleartex Oil B* in their automatics, as cutting, lubricating and hydraulic oil. And here's what they say about it:

"We like *Texaco Cleartex Oil B* particularly because of its tri-purpose features and its versatility. We can use the one oil on steels, brass, other metals —even copper—and be sure of excellent finish, long tool life, and no corrosion. And the fact that *Texaco Cleartex Oil B* keeps the lubricating sides of our automatics clean means a savings in maintenance costs."

Texaco Cleartex Oil B is one of a complete line of *Texaco Cutting, Grinding and Soluble Oils.* Whatever the stock, however you machine it—there's one of these superior oils exactly right to assure better, faster machining at lower cost.

To help you select the proper one, consult a Texaco Lubrication Engineer. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO CUTTING, GRINDING, SOLUBLE AND HYDRAULIC OILS

TUNE IN . . . TEXACO STAR THEATER starring JIMMY DURANTE on television . . . Saturday nights, NBC.

Men in the News

Continued from Page 77

BullDog Electric Products Co.—**Merle P. Spurrell** has been promoted to general sales manager.

Muskegon Piston Ring Co., Original Equipment Market Div.—**G. E. Smith** has been named assistant sales manager.

Holley Carburetor Co.—**Byron B. Phillips** has been elected vice-president in charge of finance and treasurer, and **Carl H. Hofmeister** has been named vice-president in charge of planning and new products.

Milsco Manufacturing Co.—**Carl T. Swenson** was elected president and treasurer; **William A. Wing** and **Gerald W. Swenson,** vice-presidents; and **Joseph H. Marshutz,** secretary.

Dana Corp.—**Frank J. Voss** has been named public relations manager.

Eaton Automotive Products, Ltd.—**W. A. Paterson** has been appointed vice-president and general manager.

Waukesha Motor Co.—**C. K. Jones** has been named assistant manager of purchases; **Melvin C. Erickson,** chief engineer; and **Paul E. Mantz,** assistant sales and service manager.

A. O. Smith Corp.—**Milton E. Morgan** has been named director of purchases.

Claud S. Gordon Co.—**Raymond E. Thompson** has been named assistant to the president.

Arwood Precision Casting Corp.—**William I. Matthes** has been elected executive vice-president.

American Motors Corp.—**George Hausch** is now engineering manager of the Body Division; **Emerson Lindsay,** chief engineer in charge of structures; **Gilbert Milhan,** body engineer in charge of surface development; **Arthur Hatch,** body interiors engineer; **Walter Jerstad,** chief body production engineer in charge of body activities in Wisconsin; and **Robert F. Jenson,** accessories engineer.

Goddard & Goddard Co.—**James F. O'Donnell** has been named production manager, and **Harold Thom** has been made factory superintendent.



American Motors Corp.—L. H. Nagler has been promoted to administrative engineer, and Carl W. Cenzer has been advanced to chief engineer in charge of all body activities.

Kelsey-Hayes Wheel Co., Steel Products Div.—**Frank M. Beeler** is now assistant chief engineer.

Mercury Div., Ford Motor Co.—**E. A. Erickson** has been appointed manager for the central sales region.

E. F. Houghton & Co.—**Frank Ross** was elected to the board of directors.

Permacel Tape Corp.—**John S. DeNoia** is now automotive sales manager.



Tung-Sol Electric, Inc.—Harold Cook has been appointed director of advertising and market research.

Joseph T. Ryerson & Son, Inc.—**Harry L. Sturla, Jr.,** was named manager of the Market Research Dept.

Allis-Chalmers Mfg. Co.—**Willis G. Scholl** was elected executive vice-president. **E. J. Mercer** was made general manager of the Construction Machinery Div.

Vickers, Inc.—**M. J. Taup** has been made administrative assistant to the vice-president of sales. **A. M. Lane** succeeds him as manager of mobile products sales.

Consolidated Electrodynamics Corp.—**Francis T. Greenup** is now assistant chief product engineer.

Magnesium Co. of America—**Dennis E. Harvey** is now vice-president and general sales manager.

Morey Machinery Co., Inc.—**Joseph L. Knopf** was elected vice-president.

Kollsman Instrument Corp.—**Joseph J. Langford** was named as manager of Air Force contracts.

Walter Kidde Nuclear Laboratories Inc.—**Wilbur E. Kelley** has been elected president.

United States Steel Corp.—**D. R. Waugh** has been appointed assistant director of market development.

Pratt & Whitney Co., Inc.—**Ernest J. Meuten** has been named divisional controller of the Machine Tool, Cutting Tool and Gage Divs.; and **Willard E. Ritter** has been made divisional controller for the Chandler-Evans Div.

(*Turn to page* 528, *please*)

Necrology

George L. Palmer, 54, vice-president and controller of Schemenauer Manufacturing Co., and former executive of Willys Motors, Inc., died recently at Toledo, O.

Claus Anderson, 59, personnel director of the Kenosha, Wis., plant of American Motors Corp., died Feb. 23, at Kenosha, Wis.

Mrs. Alfred P. Sloan, Jr., wife of the chairman of the board of General Motors Corp., died recently, at Palm Beach, Fla.

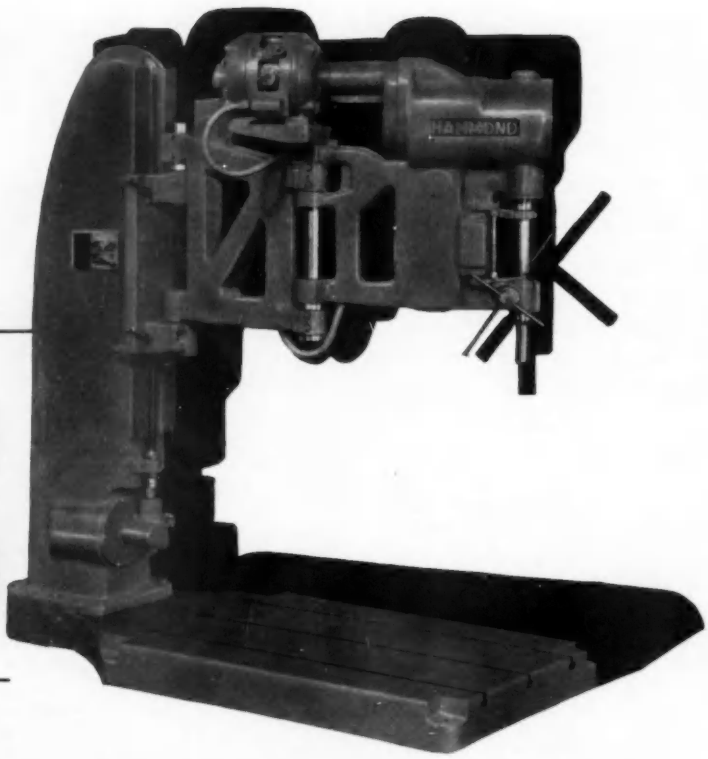
DeForest Lott, 57, chief development engineer of Textileather Div. of General Tire & Rubber Co., died recently, at Toledo, O.

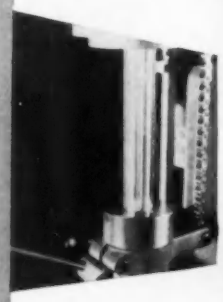
John M. Meyers, 61, president of United Aircraft Products, Inc., died Feb. 18, in New York, N. Y.

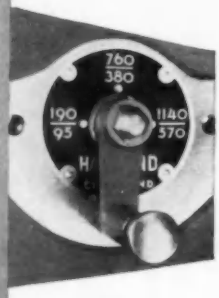
Joseph D. Sharkey, 51, manufacturers sales manager of Firestone Tire & Rubber Co., died Feb. 26, at Akron, O.

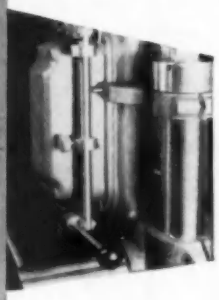
Ferdinand J. Pohlmeyer, chief metallurgist of National Broach & Machine Co., died Feb. 20, at Detroit, Mich.

Clarence D. Kerby, former creative director of Batten, Barton, Durstine & Osborn, Inc., died Feb. 22, at Detroit, Mich.









FOOTBURT

FOR *faster* RADIAL

DRILLING AND TAPPING

■ Hammond Radial Drilling and Tapping Machines may be spotted in the production line for drilling, tapping or reaming. With its unique Bracket Type construction the spindle can be swung quickly from hole to hole. Six Quick Speed Changes are instantly available and the Hammond Tapping Reverse is very fast and convenient to operate.

THE FOOTE-BURT COMPANY

Cleveland 8, Ohio

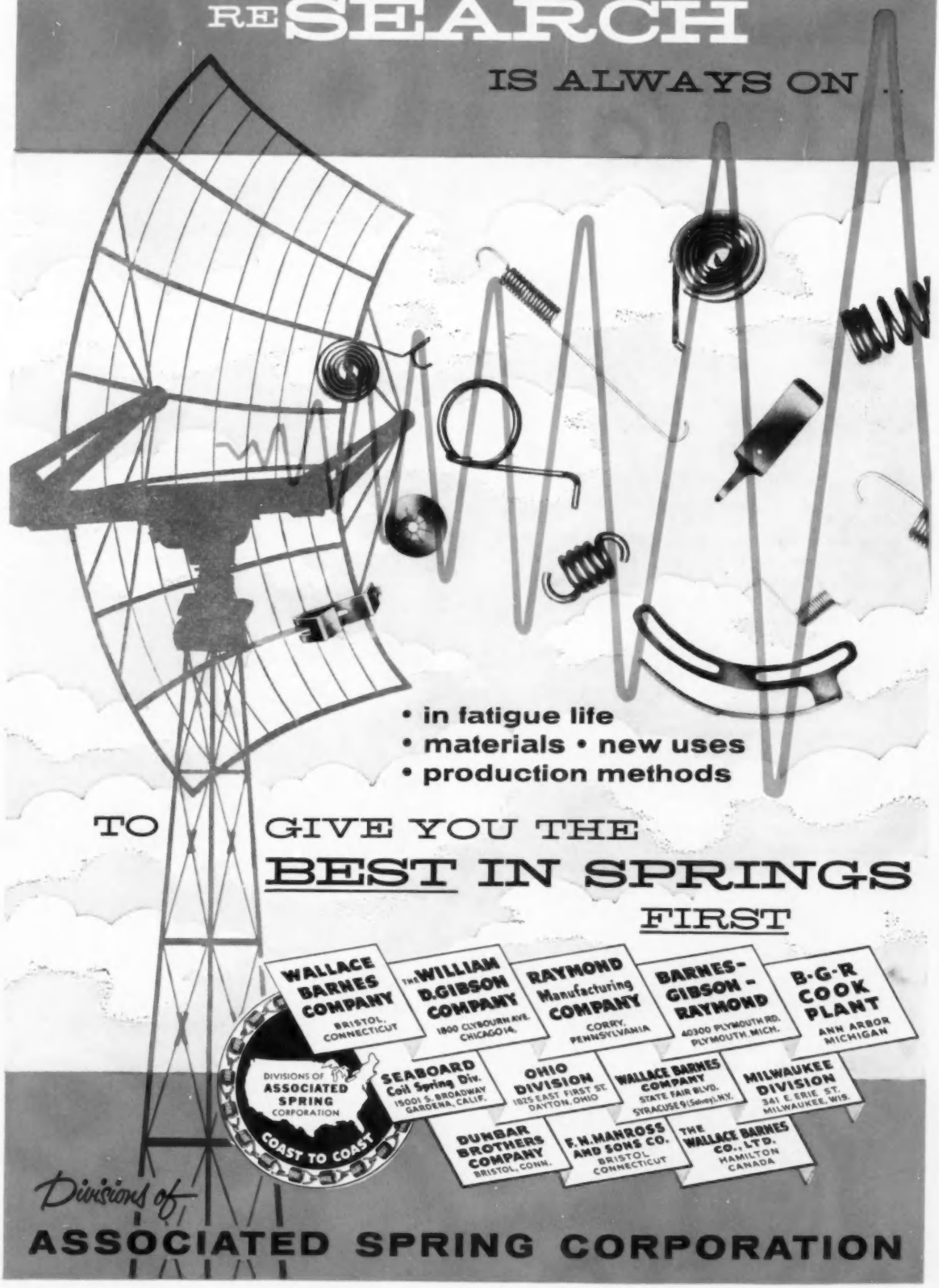
Detroit Office: General Motors Building

☆engineered for production

FOOTBURT

MACHINE TOOLS

RESEARCH
IS ALWAYS ON . .



• in fatigue life
• materials • new uses
• production methods

TO GIVE YOU THE
BEST IN SPRINGS
FIRST

WALLACE BARNES COMPANY
BRISTOL, CONNECTICUT

THE WILLIAM D. GIBSON COMPANY
1800 CLYBOURN AVE. CHICAGO 14.

RAYMOND Manufacturing COMPANY
CORRY, PENNSYLVANIA

BARNES-GIBSON-RAYMOND
40300 PLYMOUTH RD. PLYMOUTH, MICH.

B-G-R COOK PLANT
ANN ARBOR MICHIGAN

DIVISIONS OF ASSOCIATED SPRING CORPORATION
COAST TO COAST

SEABOARD Coil Spring Div.
15001 S. BROADWAY GARDENA, CALIF.

OHIO DIVISION
1825 EAST FIRST ST. DAYTON, OHIO

WALLACE BARNES COMPANY
STATE FAIR BLVD. SYRACUSE 9 (Salina), N.Y.

MILWAUKEE DIVISION
341 E. ERIE ST. MILWAUKEE, WIS.

DUNBAR BROTHERS COMPANY
BRISTOL, CONN.

F. N. MANROSS AND SONS CO.
BRISTOL CONNECTICUT

THE WALLACE BARNES CO., LTD.
HAMILTON CANADA

Divisions of
ASSOCIATED SPRING CORPORATION

Farval provides foolproof lubrication for 50-spindle drilling machine

FARVAL—
Studies in Centralized Lubrication
No. 181

GOOD lubrication plays a vital part in the success of any drilling machine. It boosts output, cuts costs and extends machine life.

Barnes Drill Company of Rockford, Illinois, has offered its customers the benefit of Farval Centralized Lubrication since 1945. Thousands of bearings on Barnesdril equipment are being protected by over 100 factory-installed Farval systems.

What Farval does

As a machine user, you, too, can get that extra production and protection with Farval. Standardize your lubrication by placing Farval on all types of equipment throughout your factory. Farval lubricates while the equipment is in operation, delivering a measured amount of clean lubricant to every bearing whenever necessary. No bearings are ever missed.

Farval measuring valves automatically distribute the correct charge to each bearing throughout the system circuit. Farval sends the lubricant from a conveniently located pumping unit, eliminating machine shutdown time and providing an unparalleled degree of safety.

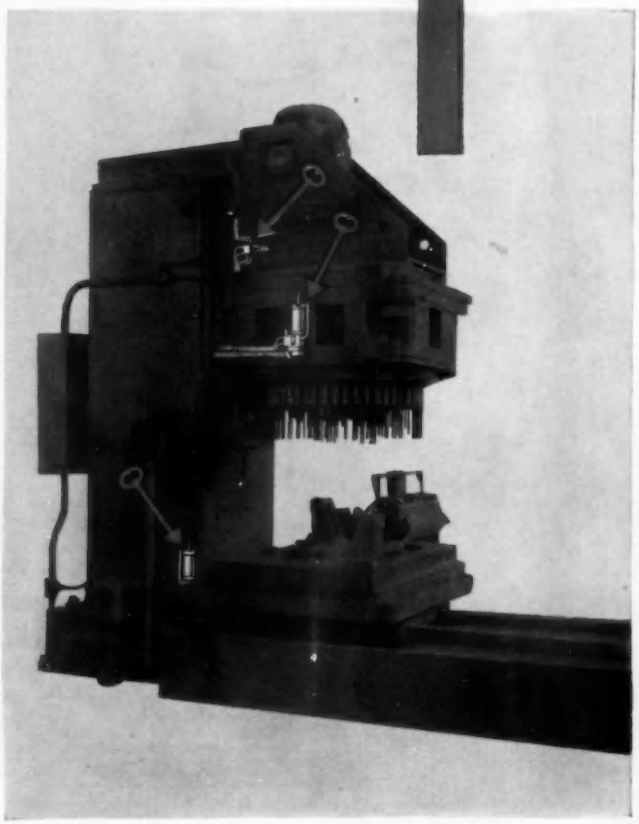
Free lubrication survey

Whether your equipment is old or new, a Farval Centralized Lubrication System will serve it better. We would be glad to send one of our lubrication engineers to inspect your plant equipment. He will present a written analysis of what Farval can do for you—without obligation, of course. The savings will look good. Ask for Bulletin 26-R.

The Farval Corporation, 3296 East 80th Street, Cleveland 4, Ohio.

Affiliate of The Cleveland Worm and Gear Company, Industrial Worm Gearing. In Canada: Peacock Brothers Limited.



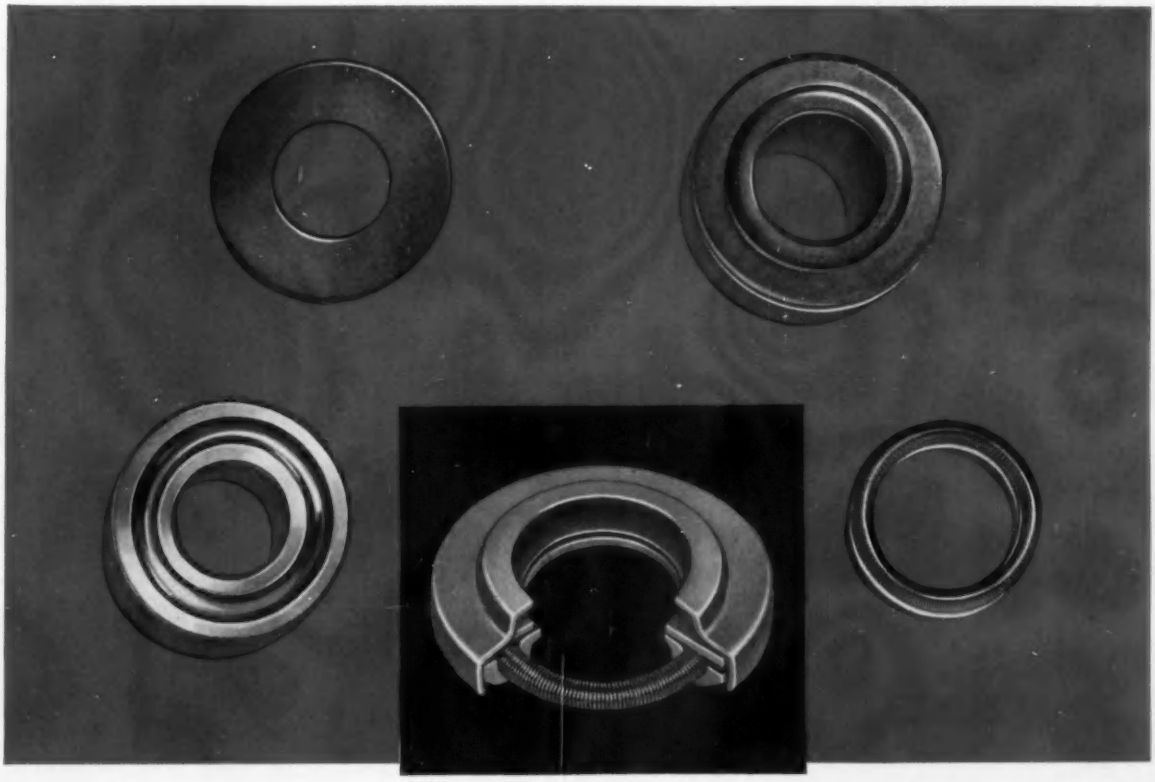


KEYS TO ADEQUATE LUBRICATION—Wherever you see the Farval valve manifolds, dual lubricant lines and central pumping station, you know a machine is being properly lubricated.

This Farvalized special vertical drilling machine, built by Barnes for a Midwestern aircraft engine manufacturer, is a saddle-type unit, arranged with a 50-spindle adjustable center auxiliary head with slip-type spindle construction.

NEW "ROTOCOIL"...

Positive Valve Rotation with only 4 parts



Now you can give your engines *positive* valve rotation at lowest possible cost.

The new Thompson "Rotocoil" has only 4 simple parts. Yet it provides dependable, positive rotation at the slow rotative speeds best suited to minimize valve burning and wear. Valve life is lengthened 3 to 5 times, fuel economy is increased, engine performance remains high longer.

Let Valve Division engineers show you the new Thompson "Rotocoil"... help you work it into present and future engine designs.

Valve Division Thompson Products, Inc.

1455 EAST 185th ST. • CLEVELAND 10, OHIO

Guarantee TOP Performance and Maximum Life!

Specify THESE TOP QUALITY FEATURES...

(Standard on Miller Cylinders at no extra cost)

Specify CASE HARDENED CHROME PLATED PISTON RODS

On all Air and Hydraulic Cylinders

Benefits To You

CASE-HARDENED Piston Rods (52-54 Rockwell "C") provide practically complete protection against damage from hammer blows, wrench-dropping, mishandling, and similar occurrences. ***Available from Miller at no extra cost.***

The HARD CHROME PLATING over the case-hardened rods protects against scratch-damage and rust. ***Available from Miller at no extra cost.***

Specify "TEFLON" WIPERS

On all Air and Hydraulic Cylinders

Benefits To You

"TEFLON" Rod Wipers and "TEFLON" Hydraulic Piston Rod Seals withstand temperatures from—100°F. to plus 500°F. They are impervious to practically all known chemicals, including the fire-resistant, special, and standard hydraulic fluids in current use. ***Available from Miller at no extra cost.***

Specify TEFLON HYDRAULIC ROD SEALS

On all Hydraulic Cylinders

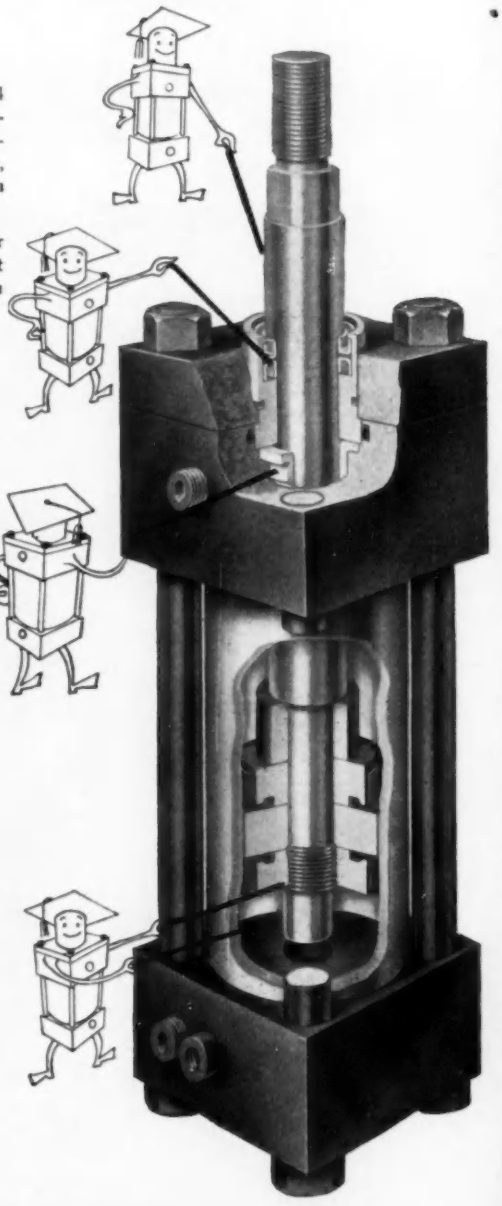
Specify RUST RESISTANT SURFACES

On all Air and Hydraulic Cylinders

Benefits To You

Highest quality Black Ferric Oxide Finish provides rust protection in air cylinder operation and on all cylinders during shipping and installation.

Cylinder heads, caps, mountings, pistons, followers, tie rods, and the unplated portions of the piston rods have this finish ***at no extra cost on all Miller cylinders.*** (This finish not recommended for water service)



You may wish to route this entire page to the proper department in your company, by using this handy form. Additional copies on request. →

To (Dept.)_____

"On all our future cylinder requirements, please specify the above quality features."

Signed_____

Title_____

See These New Features on Miller Cylinders at Miller

BOOTH #429

A.S.T.E. SHOW, March 19-23

International Amphitheatre, Chicago

SALES AND SERVICE FROM COAST TO COAST

CLEVELAND • YOUNGSTOWN • DAYTON • TOLEDO • CINCINNATI • COLUMBUS
PITTSBURGH • PHILADELPHIA • BOSTON • HARTFORD • NEW YORK CITY
BUFFALO • ROCHESTER • MINNEAPOLIS • GRAND RAPIDS • DETROIT • FLINT
FORT WAYNE • SOUTH BEND • INDIANAPOLIS • MILWAUKEE • LOUISVILLE
KANSAS CITY • SEATTLE • LOS ANGELES • SAN FRANCISCO • BALTIMORE
DENVER • ST. LOUIS • MOLINE • CHICAGO • HOUSTON • ATLANTA
TORONTO, CANADA and OTHER AREAS

Miller

MILLER FLUID POWER CO.

2028 N. HAWTHORNE AVE., MELROSE PARK, ILLINOIS

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS

News of the AUTOMOTIVE AND AVIATION INDUSTRIES

Continued from Page 75

British Ford Presents A Trio of New Models

Three entirely new Ford models have gone into production at the Dagenham, England, factory. All three models feature engines with hollow crankshafts cast of nodular iron. Their manufacture was pioneered by Ford in Germany for the Taunus 15M (see A.I., Aug. 1, 1955).

The Zephyr and Zodiac are both powered by a 155.8 cu in., power plant with an output of 86 bhp at 4200 rpm. Bore and stroke are 3.25 in. and 3.13 in., respectively, and compression ratio is 7.8 to 1. The three-speed transmission incorporates a Borg-Warner overdrive as an optional extra.

Both cars are 14 ft, 10.38 in. long, have a wheelbase of 8 ft, 11 in., and weigh approximately 2650 lb. Principal differences between the two models are the distinctive grilles and tail sections.

The Consul has a four-cylinder engine of the same bore and stroke. With a displacement of 103.9 cu in., it develops 59 bhp at 4200 rpm. Overall length is 14 ft, 1.9 in., and wheelbase is 8 ft, 8.5 in.



British Ford Zodiac four-door sedan powered by a six-cylinder, 86-hp engine.

More Automobile Taxes Due For Financing Road Plans

Higher excise taxes to finance the expected huge highway improvement program are certain to come, but there is still considerable doubt as to what items will be affected. It seems almost certain that taxes on gasoline, Diesel fuel, tires, and trucks, buses and trailers will be raised; a new levy on camelback used in retreading may also be expected.

Treasury Secretary Humphrey questions that these levies will be adequate and has suggested that taxes also be increased on lubricating oil, parts, and accessories. He also advocates a $1 registration fee for each 1000 lb of vehicle weight.

The automobile industry has indicated that it will not oppose higher excise taxes which are being sought to finance a proposed $35 billion highway improvement program. In a letter to the House Ways and Means Committee, James J. Nance, president of the Automobile Manufacturers Association, pledged support of the automobile industry to any reasonable and equitable highway financing plan developed.

(*Turn to page* 492, *please*)



ARMY AMPHIBIOUS VEHICLE IS POWERED BY TWO GMC ENGINES

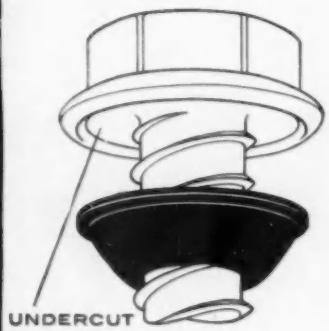
The new Army XM-157 amphibious vehicle (see AI, March 1, p. 16) is equipped with twin GMC six-cylinder, valve-in-head engines of 301.6 cu in. displacement each. Compression ratio is 7.2 to 1; maximum gross horsepower, 160 at 3600 rpm; and torque, 268 lb ft at 1400 rpm. Intended primarily for use in heavy coastal surfs, the new cargo and personnel carrier measures 42 ft by 10 ft overall.



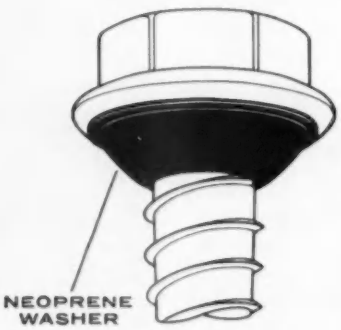
For better products

LEAKPROOF...CUSHIONED TUFF-TITE FASTENERS

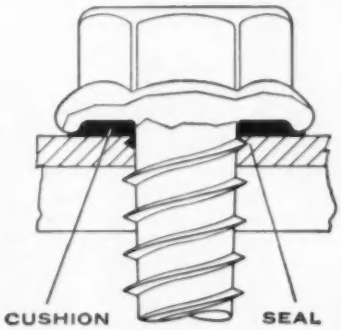
trademark



Undercut of Tuff-Tite fastener head . . .



. . . confines and controls flow of conical neoprene washer



. . . so washer seals the hole and cushions the fastener head!

Now you can • prevent leaks at fastener holes
• protect fine finishes from fastener damage
• stop vibration noises and squeaks

It's the combination of undercut head design and tough, conically shaped neoprene washer that makes Tuff-Tite fasteners work. The undercut helps confine and control spread of the neoprene washer as it is compressed. The washer's conical shape causes it to flow into top threads and seal the fastener hole.

Tuff-Tite fasteners won't mar fine finishes and they stop vibration noises and squeaks because the neoprene washer spreads itself completely between fastener head and surface. The washer actually cushions the fastener and prevents metal-to-metal contact.



Leakproof, non-marring, shock and squeak absorbing! If you need these fastening advantages, you need National Tuff-Tite fasteners. Write for the Tuff-Tite fastener folder describing this line in detail.

THE NATIONAL SCREW & MFG. COMPANY
CLEVELAND 4, OHIO
Pacific Coast: National Screw & Mfg. Co. of Cal.
3423 South Garfield Ave., Los Angeles 22, Cal.

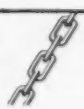
Tuff-Tite fastener facts

Standard National Tuff-Tite fasteners are available in hexagonal, pan, round and truss head styles for screw diameters No. 6 to $\frac{3}{8}$" inclusive . . . maximum over-all length $1\frac{1}{2}$". Standard fastener types are wood screws, self-tapping screws, thread cutting screws, machine screws and stove bolts. Tuff-Tite fasteners are pre-assembled with neoprene washers.

Washers are molded of neoprene which has a durometer hardness of 85 to 95.

Write for information on *special* Tuff-Tite fasteners.

National PRODUCTS

Fasteners  Hodell Chains  Chester Hoists 

MOTOR VEHICLE SECTION

CARS
TRUCKS
BUSES
TRAILERS
TRACTORS

PRODUCTION

NEW REGISTRATIONS

DISTRIBUTION OUTLETS

TOTAL REGISTRATIONS

EXPORTS

IMPORTS

SPECIFICATIONS

AI
AUTOMOTIVE INDUSTRIES
38TH
ANNUAL STATISTICAL ISSUE 1956

amp

and its wholly owned subsidiaries

Manufacturers of Quality Products for automobiles, trucks, aircraft, offices, factories, warehouses and homes



AMERICAN METAL PRODUCTS CO. Manufacturers of parts for the automotive, truck and aircraft industries, including: front and rear seat assemblies—stampings—zig-zag and formed wire springs—axle housings—torque tubes—bumpers—2-way, 4-way and 6-way seat adjusters—jet engine components—storage racks for materials handling.

ALLIANCEWARE, INC. Manufacturers of porcelain-on-steel bathtubs, lavatories and sinks for home, business and industry—also distributors of vitreous china closets.

BORROUGHS MANUFACTURING CO. Manufacturers of steel office furniture—library shelving—bookcases—storage cabinets—wrap racks—automotive storage bins—unitized flexi steel shelving.

GENERAL SPRING PRODUCTS, LTD. Manufacturers of zig-zag and formed wire springs—front and rear seat frame assemblies for the Canadian automotive and truck industry.

TUBE REDUCING CORP. Manufacturers of processed tubing for bearing, cylinder and aircraft industries—storage racks for materials handling.

AMERICAN METAL PRODUCTS CO.

5959 Linsdale Avenue, Detroit 4, Michigan



PRODUCTION

PASSENGER CARS • TRUCKS BUSES • TRACTORS • TRAILERS

★ ★ ★ ★

Factory Sales and Their Wholesale Value, U. S. Plants

As reported by the Automobile Manufacturers Association

	PASSENGER CARS			TRUCKS AND BUSES			TOTAL	
Year	Number of Units	Wholesale Value†	Average Wholesale Price	Number of Units	Wholesale Value†	Average Wholesale Price	Number of Units	Wholesale Value†
1900	4,192	$ 4,899,443	$1,169	.....	.....	....	4,192	$ 4,899,443
1901	7,000	8,183,000	1,169	.....	.....	....	7,000	8,183,000
1902	9,000	10,395,000	1,155	.....	.....	....	9,000	10,395,000
1903	11,235	13,000,000	1,157	.....	.....	....	11,235	13,000,000
1904	22,130	23,357,692	1,055	700	$ 1,272,747	$1,818	22,830	24,630,439
1905	24,250	38,670,000	1,594	750	1,330,000	1,773	25,000	40,000,000
1906	33,200	61,460,000	1,851	800	1,440,000	1,800	34,000	62,900,000
1907	43,000	91,620,000	2,131	1,000	1,780,000	1,780	44,000	93,400,000
1908	63,500	135,250,000	2,129	1,500	2,550,000	1,700	65,000	137,800,000
1909	123,990	159,765,721	1,288	3,297	5,333,683	1,618	127,287	165,099,404
1910	181,000	215,340,000	1,189	6,000	9,660,000	1,610	187,000	225,000,000
1911	199,319	225,000,000	1,128	10,681	21,000,000	1,966	210,000	246,000,000
1912	356,000	335,000,000	941	22,000	43,000,000	1,954	378,000	378,000,000
1913	461,500	399,902,000	866	23,500	44,000,000	1,872	485,000	443,902,000
1914	548,139	420,838,378	768	24,900	44,219,096	1,776	573,039	465,057,474
1915	895,930	575,978,000	643	74,000	125,800,000	1,700	969,930	701,778,000
1916	1,525,578	921,378,000	604	92,130	161,000,000	1,747	1,617,708	1,082,378,000
1917	1,745,792	1,053,505,781	603	128,157	220,982,668	1,724	1,873,949	1,274,488,449
1918	943,436	801,937,925	850	227,250	434,168,992	1,910	1,170,686	1,236,106,917
1919	1,651,625	1,365,395,415	827	224,731	371,422,820	1,653	1,876,356	1,736,818,235
1920	1,905,560	1,809,170,963	949	321,789	423,249,410	1,315	2,227,349	2,232,420,373
1921	1,468,067	1,038,191,037	707	148,052	166,070,810	1,122	1,616,119	1,204,261,847
1922	2,274,185	1,494,513,991	657	269,991	226,049,658	837	2,544,176	1,720,563,649
1923	3,624,717	2,196,272,116	606	409,295	308,537,929	754	4,034,012	2,504,810,045
1924	3,185,881	1,970,096,559	618	416,659	318,580,580	765	3,602,540	2,288,677,139
1925	3,735,171	2,458,370,026	658	530,659	458,400,277	864	4,265,830	2,916,770,303
1926	3,783,987	2,640,064,519	698	516,947	452,123,435	875	4,300,934	3,092,187,954
1927	2,936,533	2,164,670,891	737	464,793	420,130,624	904	3,401,326	2,584,801,515
1928	3,775,417	2,572,599,143	681	583,342	460,108,903	789	4,358,759	3,032,708,046
1929	4,455,178	2,790,614,309	626	881,909	622,533,897	706	5,337,087	3,413,148,206
1930	2,787,456	1,644,083,152	590	575,364	390,752,061	679	3,362,820	2,034,835,213
1931	1,948,164	1,108,246,698	567	432,262	265,444,618	614	2,380,426	1,373,691,316
1932	1,103,557	616,860,347	559	228,303	137,624,157	603	1,331,860	754,484,504
1933	1,560,599	773,424,963	496	329,218	175,380,863	533	1,889,817	948,805,826
1934	2,160,865	1,140,478,174	526	576,205	326,781,688	567	2,737,070	1,467,259,862
1935	3,273,874	1,707,836,325	522	697,367	380,997,330	546	3,971,241	2,088,833,655
1936	3,679,242	2,014,747,225	548	782,220	463,719,466	593	4,461,462	2,478,466,691
1937	3,929,203	2,240,912,620	570	891,016	537,314,633	603	4,820,219	2,778,227,253
1938	2,019,566	1,241,032,295	615	488,841	329,917,646	675	2,508,407	1,570,949,941
1939	2,888,512	1,770,231,597	613	700,377	489,786,701	699	3,588,889	2,260,018,298
1940	3,717,385	2,370,654,083	638	754,901	567,820,414	752	4,472,286	2,938,474,497
1941	3,779,682	2,567,205,996	679	1,060,820	1,069,799,855	1,008	4,840,502	3,637,005,851
1942	222,862	163,813,559	736	818,662	1,427,456,801	1,744	1,041,524	1,591,270,360
1943	139	101,799	....	699,689	1,451,794,475	2,076	699,828	1,451,896,274
1944	610	446,704	....	737,524	1,700,928,939	2,306	738,134	1,701,375,643
1945	69,532	57,254,655	823	655,683	1,181,955,532	1,803	725,215	1,239,210,187
1946	2,148,699	1,979,781,084	921	940,866	1,043,247,276	1,109	3,089,565	3,023,028,360
1947	3,558,178	3,936,017,000	1,106	1,239,443	1,731,713,000	1,397	4,797,621	5,667,730,000
1948	3,909,270	4,870,423,000	1,246	1,376,274	1,880,475,000	1,366	5,285,544	6,750,898,000
1949	5,119,466	6,650,857,000	1,299	1,134,185	1,394,035,000	1,229	6,253,651	8,044,892,000
1950	6,665,883	8,468,137,000	1,270	1,337,193	1,707,748,000	1,277	8,003,056	10,175,885,000
1951	5,338,435	7,241,275,000	1,356	1,426,828	2,323,859,000	1,629	6,765,263	9,565,134,000
1952	4,320,794	6,455,114,000	1,494	1,218,165	2,319,789,000	1,904	5,538,959	8,774,903,000
1953	6,116,948	9,002,580,000	1,472	1,206,266	2,089,060,000	1,732	7,323,214	11,091,640,000
1954	5,558,897	8,218,094,000	1,478	1,042,174	1,660,019,000	1,593	6,601,071	9,878,113,000
1955	7,920,133	12,350,000,000*	1,559	1,249,011	2,050,000,000*	1,641	9,169,144	14,400,000,000*

*—Partly estimated. †—Beginning with year 1937, standard equipment is included in the values reported.

A substantial part of trucks and buses reported comprises chassis only, without bodies; hence the value of bodies for these chassis is not included.

Federal excise taxes are excluded in all years. Table above includes sales of military vehicles.

• PRODUCTION •

Monthly Motor Vehicle Factory Sales

From Plants Located in the United States
As reported by the Automobile Manufacturers Association

PASSENGER CARS

Month	1955	1954	1953	1952	1951	1950
Jan.	635,513	454,562	452,617	273,122	478,589	487,824
Feb.	677,705	446,676	485,270	333,224	505,865	385,361
Mar.	791,280	531,529	566,074	372,440	617,399	469,618
Apr.	753,434	534,667	595,776	415,357	503,038	455,193
May	721,139	497,062	548,322	397,486	511,938	575,518
June	647,658	507,055	585,678	407,962	482,029	720,688
July	658,736	451,663	596,901	168,327	381,407	595,067
Aug.	620,610	445,306	512,730	218,577	426,932	682,782
Sept.	467,845	300,998	476,232	438,397	366,068	616,827
Oct.	505,177	221,195	528,814	471,808	415,255	651,169
Nov.	745,993	498,248	378,906	405,111	356,590	504,445
Dec.	695,043	669,936	389,628	418,983	293,325	521,371
Total	7,920,133	5,558,897	6,116,948	4,320,794	5,338,435	6,665,863

TRUCKS AND BUSES

Month	1955	1954	1953	1952	1951	1950
Jan.	89,866	96,572	111,853	102,288	128,244	93,542
Feb.	67,237	87,469	96,930	101,992	112,463	90,106
Mar.	103,317	101,474	134,365	110,533	137,626	111,042
Apr.	128,406	97,102	126,899	114,228	136,231	104,120
May	128,254	91,500	93,810	106,431	140,789	121,378
June	119,524	91,821	74,453	110,748	135,656	135,926
July	109,885	78,753	105,998	43,455	110,909	111,635
Aug.	95,553	76,144	101,925	52,405	122,775	135,341
Sept.	92,117	68,944	98,399	112,762	109,934	106,016
Oct.	96,079	66,535	92,474	132,453	111,193	109,399
Nov.	114,807	89,537	74,081	114,425	93,678	99,124
Dec.	103,966	96,235	95,079	116,445	87,380	119,564
Total	1,249,011	1,042,084	1,206,366	1,218,165	1,426,828	1,337,193

TOTAL CARS, TRUCKS AND BUSES

Month	1955	1954	1953	1952	1951	1950
Jan.	725,379	551,134	564,470	375,410	606,833	581,366
Feb.	744,942	534,145	582,200	435,216	618,328	475,467
Mar.	894,597	633,003	700,439	482,973	755,025	580,660
Apr.	881,840	631,769	722,675	529,585	639,269	559,313
May	849,393	588,562	642,132	503,917	652,727	696,896
June	767,182	598,876	660,131	518,710	617,685	856,614
July	768,621	530,416	702,899	211,782	492,316	706,702
Aug.	716,163	521,450	614,655	270,982	549,707	818,123
Sept.	559,962	369,942	574,631	551,159	476,002	722,843
Oct.	601,256	287,730	621,288	604,261	526,448	760,568
Nov.	860,800	587,785	452,987	519,536	450,268	603,569
Dec.	799,009	766,012	484,707	535,428	380,655	640,935
Total	9,169,144	6,600,981	7,323,214	5,538,959	6,765,263	8,063,056

Factory Sales to Domestic and Foreign Markets

Automobile Manufacturers Association

PASSENGER CARS

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1943	139	121	18	12.9
1944	610	308	302	49.5
1945	69,532	68,093	1,439	2.1
1946	2,148,699	2,004,649	144,050	6.7
1947	3,558,178	3,297,331	260,847	7.3
1948	3,909,270	3,676,093	233,177	6.0
1949	5,119,466	4,963,325	156,141	3.0
1950	6,665,863	6,512,938	152,925	2.3
1951	5,338,435	5,091,470	246,965	4.6
1952	4,320,794	4,153,746	167,048	3.9
1953	6,116,948	5,930,686	186,262	3.0
1954	5,558,897	5,352,353	206,544	3.7
1955	7,920,133	7,665,796	254,337	3.2

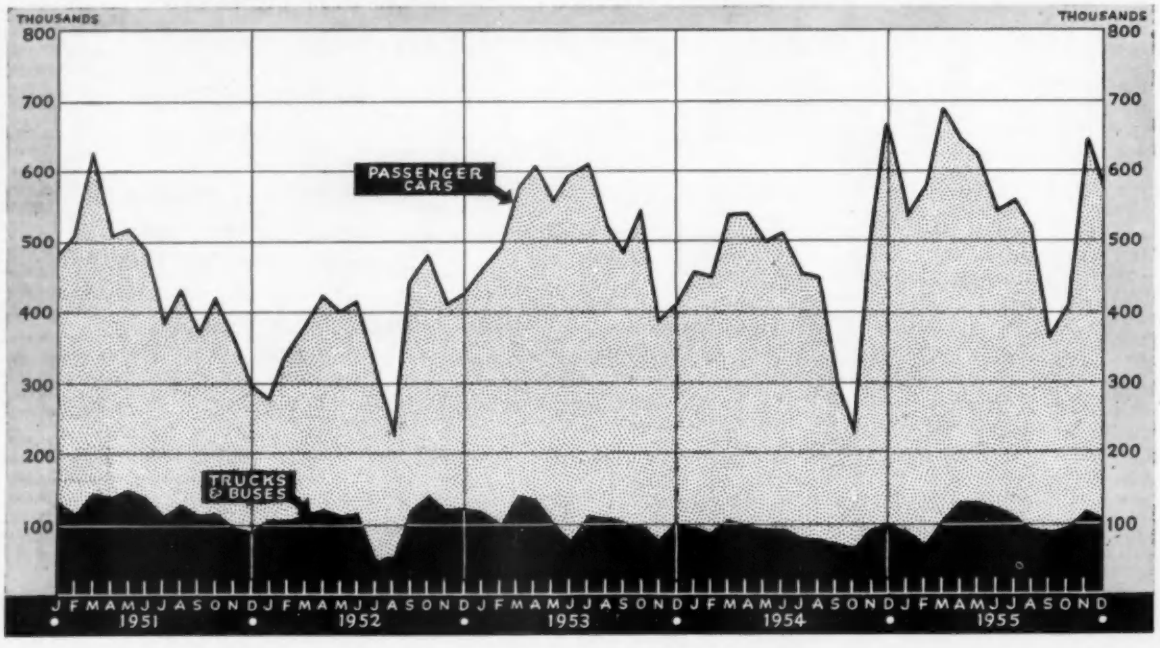
TRUCKS AND BUSES

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1943	24,842	23,420	1,422	5.7
1944	116,167	102,295	13,872	11.9
1945	291,469	254,039	37,430	12.8
1946	940,866	753,845	187,021	19.9
1947	1,239,443	987,954	251,489	20.3
1948	1,376,274	1,173,234	203,040	14.7
1949	1,134,185	1,002,551	131,634	11.6
1950	1,337,193	1,186,434	150,759	11.3
1951	1,426,828	1,203,244	223,584	15.7
1952	1,218,165	1,055,627	162,538	13.3
1953	1,202,266	1,067,325	138,941	11.6
1954	1,042,174	847,258	194,916	18.7
1955	1,249,091	1,056,315	192,696	15.4

TOTAL MOTOR VEHICLES

Year	Total	Domestic Market	Foreign Market	Per Cent Foreign
1943	24,981	23,541	1,440	5.8
1944	116,777	102,603	14,174	12.1
1945	361,101	322,132	38,869	10.7
1946	3,089,565	2,758,494	331,071	10.7
1947	4,797,621	4,285,285	512,336	10.7
1948	5,285,544	4,849,327	436,217	8.3
1949	6,253,651	5,965,876	287,775	4.6
1950	8,003,056	7,699,372	303,684	3.8
1951	6,765,263	6,294,714	470,549	6.9
1952	5,538,959	5,209,373	329,586	6.0
1953	7,323,214	6,998,011	325,203	4.4
1954	6,601,071	6,199,611	401,460	6.1
1955	9,169,144	8,722,111	447,033	4.9

MOTOR VEHICLE FACTORY SALES BY MONTHS, 1951-1955



Passenger Car Factory Sales by Body Types

As reported by the Automobile Manufacturers Association

Body Type	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
4-Door Sedans*	3,043,564	38.43	2,592,841	46.64	3,078,616	50.34	2,259,166	52.29
2-Door Sedans, Coaches, Coupes†	1,677,430	21.18	1,476,989	26.57	1,694,638	27.70	1,214,904	28.12
Business Coupes	13,408	0.17	16,510	0.30	36,974	0.60	29,000	0.67
"Hard Top" Coupes and Sedans	2,168,798	27.38	954,519	17.17	841,982	13.76	539,508	12.49
Convertibles—except "Hard Top"	239,790	3.03	155,667	2.80	158,962	2.60	100,116	2.32
Station Wagons‡	759,422	6.59	349,450	6.29	297,393	4.86	169,036	3.90
Chassis	17,721	0.22	12,921	0.23	8,383	0.14	9,064	0.21
Total	7,920,133	100.00	5,558,897	100.00	6,116,948	100.00	4,320,794	100.00

†—Does not include business coupes. ‡—Includes only station wagons produced on passenger car chassis. *—Includes taxicabs.

1955-1954 Passenger Car Production—by Makes, by Months

As reported to Automotive Industries by the car factories

1955

Make	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Hudson	2,999	6,113	10,365	6,977	3,584	3,985	3,319	2,185	1,755	1,265	4,780	5,361	52,688
Nash	4,472	9,692	15,528	14,519	14,652	12,319	9,231	4,923	3,406	886	7,727	11,747	109,102
Total—American Motors	7,471	15,805	25,893	21,496	18,236	16,304	12,550	7,108	5,161	2,151	12,507	17,108	161,790
Chrysler	17,470	17,063	23,520	17,760	17,573	18,367	12,083	244	5,697	14,893	16,405	14,964	176,039
De Soto	13,469	14,007	15,813	14,240	11,845	10,521	8,431	802	5,569	11,335	12,676	11,059	129,767
Dodge	32,797	31,392	35,208	30,472	23,393	25,926	18,654	10,690	20,398	28,273	29,459	26,376	313,038
Plymouth	64,046	68,068	79,680	76,443	68,143	65,810	55,477	57,820	4,224	60,149	75,000	68,131	742,991
Total—Chrysler Motors	127,782	130,530	154,221	138,915	120,954	120,624	94,645	69,556	35,888	114,650	133,540	120,530	1,361,835
Continental	.....	.....	.....	.....	.....	.....	.....	.....	.....	630*	265	336	1,231
Ford	143,761	137,175	157,672	153,940	153,294	149,105	143,890	140,453	106,083	162,596	163,245	153,308	1,764,522
Lincoln	2,906	3,709	4,479	4,548	3,886	2,148	None	1,934	3,788	3,846	4,545	4,206	39,995
Mercury	32,383	34,870	39,756	43,354	42,627	40,909	33,095	26,938	24,896	42,996	42,637	30,450	434,911
Total—Ford Motors	179,050	175,754	201,907	201,842	199,807	192,162	176,985	169,325	134,767	210,068	210,692	188,300	2,240,659
Buick	62,427	64,117	79,034	79,181	76,925	63,373	71,622	65,383	67,592	18,976	63,141	69,525	781,296
Cadillac	14,135	13,497	15,384	14,126	13,497	11,562	12,878	14,864	3,766	9,991	14,799	14,835	153,334
Chevrolet	154,517	153,493	173,031	163,179	164,053	130,669	172,020	164,016	130,529	85,169	181,516	157,847	1,830,039
Oldsmobile	48,416	50,257	58,593	58,828	57,860	54,459	61,091	59,989	53,452	24,757	61,360	54,398	643,460
Pontiac	48,000	49,602	59,894	55,604	54,629	44,581	48,710	51,511	24,648	47,451	56,596	40,634	581,860
Total—General Motors	327,495	330,966	385,936	370,918	366,964	304,644	366,321	355,763	279,987	186,344	377,412	337,239	3,989,989
Packard	4,993	6,230	8,441	7,867	8,136	7,653	5,349	4,459	188	4,426	5,992	5,933	69,667
Studebaker	11,796	14,912	16,147	11,725	9,992	7,392	3,729	8,351	5,362	513	8,488	13,592	111,999
Total—S-P Corp.	16,789	21,142	24,588	19,592	18,128	15,045	9,078	12,810	5,550	4,939	14,480	19,525	181,666
Kaiser	None	None	None	None	409	612	None	None	None	None	None	None	1,021
Willys	920	1,296	1,471	1,091	None	None	None	None	None	None	None	None	4,778
Total—Willys Motors	920	1,296	1,471	1,091	409	612	None	None	None	None	None	None	5,779
Total—All Makes	659,507	675,493	794,016	753,854	724,498	649,391	659,579	614,562	461,353	518,152	748,631	682,702	7,941,738

*—Produced in October and previous months.

1954

Make	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Hudson	2,078	1,302	2,985	1,803	2,469	3,678	2,866	3,858	3,517	3,470	None	None	28,026
Nash	8,750	6,258	5,604	5,911	4,561	4,964	5,004	3,144	5,940	5,780	5,517	2,016	63,269
Total—American Motors	10,648	7,560	8,589	7,714	7,030	8,642	7,870	7,002	9,457	9,250	5,517	2,016	91,295
Chrysler	10,619	10,622	9,911	9,848	8,185	7,648	5,549	4,392	3	4,998	12,284	17,684	101,743
De Soto	8,323	6,445	6,054	6,650	5,387	4,741	4,590	3,692	1	2,936	9,197	11,828	69,844
Dodge	10,805	8,981	11,308	13,603	11,368	11,885	6,999	10,807	113	8,265	24,877	32,755	151,766
Plymouth	36,154	24,380	39,039	39,423	33,697	43,705	32,600	11,572	1,861	14,868	49,704	72,897	399,900
Total—Chrysler Motors	65,901	50,428	66,312	69,524	58,637	67,979	49,738	30,463	1,978	31,067	96,062	135,164	723,253
Ford	118,677	115,995	134,948	128,190	125,698	126,541	115,549	120,378	114,143	30,420	115,660	148,563	1,394,762
Lincoln	4,581	3,759	4,597	3,313	2,966	2,879	2,276	2,979	2,353	1,227	2,287	2,516	35,733
Mercury	30,772	25,831	29,069	22,296	22,336	22,831	18,533	17,588	21,847	9,906	10,118	25,602	256,729
Total—Ford Motors	154,030	145,585	168,614	153,799	151,000	152,251	136,358	140,945	138,343	41,553	128,065	176,681	1,687,224
Buick	38,083	42,802	50,890	54,836	51,183	49,248	43,120	44,276	41,615	14,637	46,485	54,288	531,463
Cadillac	4,019	9,510	12,238	12,444	11,250	12,280	10,651	11,048	10,674	3,370	11,608	14,654	123,746
Chevrolet	117,025	110,593	131,151	140,588	130,956	130,456	122,120	133,158	37,690	72,440	131,615	156,573	1,414,365
Oldsmobile	19,795	32,133	38,980	45,840	43,045	44,169	38,163	36,101	34,907	20,968	36,657	43,052	433,810
Pontiac	32,834	30,740	35,526	35,091	31,925	28,489	26,022	29,090	4,238	31,780	36,635	48,517	370,887
Total—General Motors	211,756	225,778	268,785	288,799	268,359	264,642	240,076	253,673	129,124	143,195	263,000	317,084	2,874,271
Packard	3,699	3,998	3,916	3,372	1,557	3,012	1,747	2,628	1,322	None	232	2,110	27,593
Studebaker	10,624	7,475	7,060	6,554	4,691	6,178	5,343	1,759	5,115	11,212	13,297	5,944	85,252
Total—S-P Corp.	14,323	11,473	10,976	9,926	6,248	9,190	7,090	4,387	6,437	11,212	13,529	8,054	112,845
Kaiser	27	932	987	1,469	1,425	948	30	None	None	None	None	None	5,818
Willys	80	1,439	1,813	2,239	1,551	1,159	289	180	524	243	522	902	10,941
Total—Willys Motors	107	2,371	2,800	3,708	2,976	2,107	319	180	524	243	522	902	16,759
Total—All Makes	456,765	443,195	526,076	533,470	494,250	504,811	441,451	436,650	285,863	236,520	506,695	639,901	5,505,647

1955 Motor Truck Factory Sales by Gross Vehicle Weights

From data supplied by the Automobile Manufacturers Association

TOTAL SALES FROM U. S. PLANTS

G.V.W.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less	42,396	30,036	48,816	61,365	60,287	52,720	48,363	41,482	46,828	50,625	56,721	46,177	585,856
5,001-10,000 lb. ..	15,055	11,277	18,275	22,178	21,721	20,753	18,813	16,015	15,645	17,695	18,753	16,391	212,571
10,001-14,000 lb...	4,059	2,645	4,155	4,834	5,149	4,105	3,711	3,208	3,125	3,770	4,309	3,835	46,905
14,001-16,000 lb...	16,489	11,911	19,176	23,779	24,420	22,877	22,164	19,467	14,490	12,299	19,984	18,699	225,755
16,001-19,500 lb...	4,743	3,375	4,364	5,416	6,408	7,709	6,681	5,958	4,311	2,787	6,001	6,466	65,719
19,501-26,000 lb...	3,007	3,095	3,241	4,231	3,734	4,393	4,217	3,470	2,728	2,381	3,773	5,143	43,413
Over 26,000 lb...	3,927	4,222	4,965	6,084	6,222	6,658	5,640	5,519	4,767	5,053	4,867	6,845	64,769
Total	89,676	67,061	102,992	127,887	127,941	119,215	109,589	95,119	91,894	95,610	114,488	103,556	1,244,998

FACTORY SALES FOR DOMESTIC MARKET

G.V.W.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less	37,040	25,500	43,294	55,955	54,231	47,614	42,482	37,218	41,149	45,821	51,866	40,286	522,456
5,001-10,000 lb....	12,271	9,113	14,454	17,933	17,092	16,615	14,883	12,508	12,053	14,012	15,125	13,361	169,420
10,001-14,000 lb...	2,300	2,319	3,543	4,146	4,345	3,576	3,261	2,648	2,751	3,233	3,552	3,014	39,688
14,001-16,000 lb...	12,015	9,045	14,836	19,041	19,397	18,591	19,206	16,304	11,673	9,296	15,991	15,293	180,688
16,001-19,500 lb...	3,178	2,808	2,671	3,926	4,269	5,302	5,055	3,381	2,672	2,428	3,901	4,073	43,674
19,501-26,000 lb...	2,552	2,658	2,748	3,572	3,290	3,803	3,766	3,025	2,260	2,075	3,495	4,616	37,860
Over 26,000 lb...	3,591	3,810	4,514	5,603	5,738	6,124	5,086	4,993	4,293	4,515	4,415	6,248	58,930
Total	73,947	55,253	86,060	110,176	108,362	101,625	93,739	80,077	76,851	81,390	98,345	86,891	1,052,716

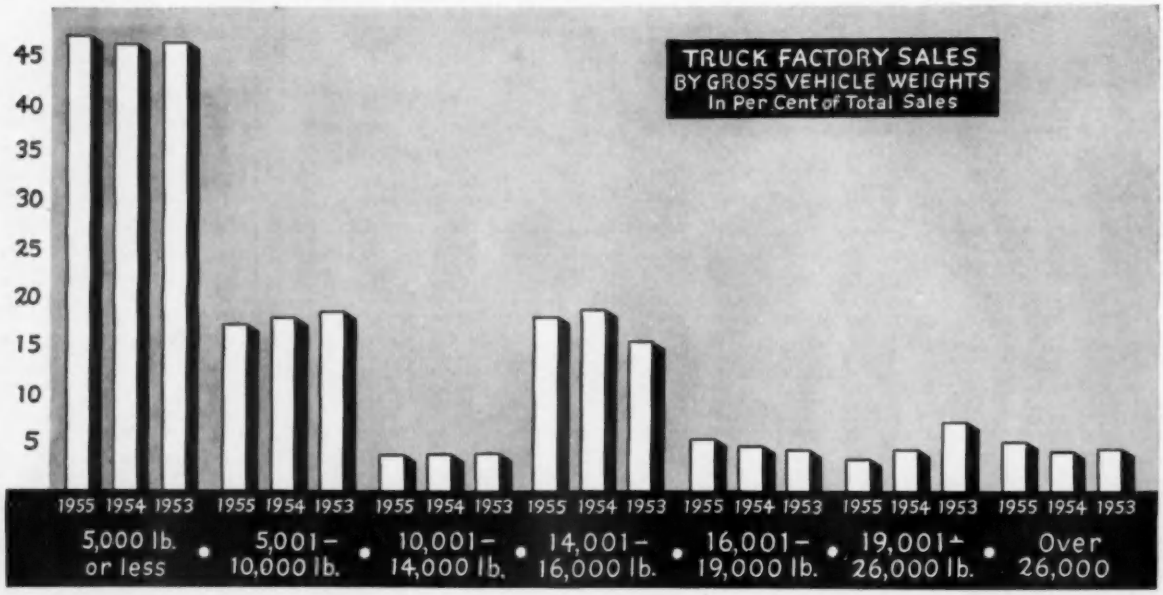
FACTORY SALES FOR EXPORT

G.V.W.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
5,000 lb. and less.	5,356	4,536	5,522	5,410	6,056	5,106	5,881	4,264	5,679	4,804	4,895	5,891	63,400
5,001-10,000 lb. ..	2,784	2,164	3,821	4,245	4,629	4,138	3,930	3,507	3,592	3,683	3,628	3,030	43,151
10,001-14,000 lb.	559	326	612	688	804	529	450	560	374	537	757	821	7,217
14,001-16,000 lb...	4,474	2,866	4,340	4,738	5,023	4,286	2,958	3,163	2,817	3,003	3,993	3,406	45,067
16,001-19,500 lb...	1,565	1,067	1,693	1,490	2,139	2,407	1,626	2,577	1,639	1,349	2,100	2,393	22,045
19,501-26,000 lb...	455	437	493	659	444	590	451	445	468	306	278	527	5,553
Over 26,000 lb...	336	412	451	481	484	534	554	526	474	538	452	597	5,839
Total	15,729	11,808	16,932	17,711	19,579	17,590	15,850	15,042	15,043	14,220	16,103	16,665	192,272

Annual Motor Truck Factory Sales by G.V.W., 1947-1955

From data supplied by the Automobile Manufacturers Association

	5,000 lb. & Less		5,001-10,000 lb.		10,001-14,000 lb.		14,001-16,000 lb.		16,001-19,500 lb.		19,501-26,000 lb.		Over 26,000 lb.		Total	
Year	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
1955....	585,856	...	212,571	...	46,905	...	225,755	...	65,719	...	43,413	...	64,769	...	1,244,988	100
1954....	482,515	46.5	186,733	18.0	39,073	3.8	195,121	18.8	48,560	4.7	45,111	4.3	40,943	3.9	1,038,056	100
1953....	563,112	48.8	221,817	18.5	46,624	3.9	185,115	15.4	49,628	4.1	86,773	7.2	49,140	4.1	1,202,209	100
1952....	505,316	41.7	234,568	19.3	56,308	4.6	219,284	18.1	45,617	3.8	105,451	8.7	46,246	3.8	1,212,790	100
1951....	587,649	41.5	260,360	18.4	99,140	7.0	278,103	19.5	68,899	4.9	81,066	5.7	42,151	3.0	1,417,368	100
1950....	627,405	47.1	266,043	20.0	89,156	6.7	219,918	16.5	53,484	4.0	47,029	3.5	29,250	2.2	1,332,285	100
1949....	513,143	45.5	279,359	24.8	84,605	13.4	173,137	15.3	37,233	3.3	23,801	2.1	17,391	1.5	1,128,674	100
1948....	485,088	35.6	267,720	19.6	182,500	13.4	280,535	20.6	76,711	5.6	50,021	3.7	21,400	1.5	1,363,975	100
1947....	375,326	30.8	182,461	14.9	259,803	21.8	291,601	23.1	41,615	3.4	42,774	3.5	26,778	2.2	1,220,333	100



BUSES • TRAILERS

Factory Sales of Special Types of Vehicles

As reported by the Automobile Manufacturers Association

Vehicle Type	1955	1954	1953	1952	1951	1950
Station Wagons[1]	780,151	364,234	318,178	189,651	194,233	159,944
Motor Coaches[2]	4,023	4,118	4,057	5,375	9,460	4,908
School Bus Chassis	26,535	22,465	21,284	19,452	31,891	19,953
Trucks with Cab-Over-Engine	45,815	26,268	24,712	19,592	25,482	22,370
Trucks with Diesel Engines	16,931	10,546	10,872	13,165	16,494	13,903
Multi-Stop Trucks	23,850	19,507	19,246	18,493	36,429	15,719
Ambulances and Funeral Vehicles		2,880	3,034	2,662	28,867	21,681

1—Includes station wagons built on truck chassis. 2—Does not include nonintegral school bus.

Motor Bus Factory Sales—by Type of Bus

Does Not Include Non-Integral School Buses

As reported by the Automobile Manufacturers Association

	Domestic Market					
Year	City Type	Inter-city Type	Special Type†	Total Domestic Market	Total Foreign Market	Total Factory Sales
1955	2,615	916	366	3,599	424	4,023
1954	2,407	834	541	3,782	336	4,118
1953	2,290	855	586	3,731	326	4,057
1952	1,997	691	1,823	4,511	864	5,375
1951	4,754	1,233	2,797	8,784	676	9,460
1950	2,748	581	683	4,012	896	4,908
1949	3,402	690	802	4,894	617	5,511
1948	6,971	2,558	997	10,526	1,773	12,299
1947	11,779	3,451	1,400	16,650	2,460	19,110

†—Includes integral school buses.

Revenue Motor Bus Factory Sales

From Plants Located in the United States

As reported by the Automobile Manufacturers Association

Month	1955	1954	1953	1952	1951
January	190	405	254	778	661
February	176	328	190	625	521
March	325	348	236	569	829
April	519	379	145	597	819
May	313	323	367	423	742
June	309	351	380	484	838
July	296	245	376	224	665
August	434	309	447	349	783
September	223	326	348	387	743
October	469	372	519	389	1,174
November	359	305	371	319	833
December	410	427	424	231	845
Total	4,023	4,118	4,057	5,375	9,453

Truck Trailer Shipments by Type

As reported by the Industry Division, Bureau of the Census

Type of Trailer	1955	1954	1953	1952
Vans				
Insulated and refrigerated	5,183	4,250	4,077	3,382
Steel	1,081	831	890	895
Aluminum	4,102	3,419	3,187	2,487
Furniture	1,967	1,141	1,468	1,437
Steel	1,731	1,061	1,345	
Aluminum	236	80	123	1,437
All other closed-top vans	34,303	18,212	22,236	17,199
Steel	10,797	6,733	11,663	9,016
Aluminum	23,506	11,479	10,573	8,183
Open-top	4,553	2,186	3,869	2,656
Steel	2,063	1,070	1,760	1,252
Aluminum	2,494	1,116	2,109	1,404
Total—Vans	46,010	25,789	31,650	24,674
Tanks				
Petroleum	5,019	5,417	3,879	4,336
All other†	699	658	830	764
Total—Tanks	5,718	6,075	4,709	5,100
Pole, pipe and logging				
Single Axle	789	599	593	982
Tandem Axle	1,368	797	997	1,485
Total	2,157	1,396	1,590	2,467
Platforms				
Racks, livestock and stake	1,255	888	4,104	4,151
Grain bodies	1,016	785	905	1,182
Flats—all types	8,108	5,333	9,111	7,729
Total—Platforms	10,379	7,006	14,120	13,062
Low-bed heavy haulers	2,867	3,090	5,415	5,529
Dump trailers	2,085	996	1,018	947
All other trailers**	4,053	7,936	34,891	2,809
Total—Complete Trailers	73,269	52,288	93,393	54,588
Trailer chassis	3,003	2,294	3,306	3,385
Total—Trailer and Chassis	76,272	54,582	96,699	57,973

†—Includes Food and L.P.G. trailers. **—Includes off-highway, auto transport, public utility trailers and converter dollies.

Truck Trailer Shipments by Months

In Units and Their Value

As reported by the Industry Division, Bureau of the Census

1955	Shipments	Value
January	4,452	$ 21,416,000
February	4,937	23,355,000
March	6,332	29,863,000
April	6,352	29,803,000
May	6,262	29,537,000
June	6,948	33,037,000
July	5,889	28,782,000
August	7,050	35,008,000
September	7,058	35,557,000
October	6,961	35,174,000
November	6,991	34,348,000
December	7,040	34,832,000
Total	76,272	$370,711,000
1954		
January	4,677	$ 17,126,000
February	4,224	17,170,000
March	4,859	19,711,000
April	4,470	18,839,000
May	4,539	18,537,000
June	5,085	21,718,000
July	4,168	21,114,000
August	4,076	20,277,000
September	4,146	20,240,000
October	4,626	23,550,000
November	4,941	24,218,000
December	4,771	23,001,000
Total	54,582	$245,501,000
1953		
January	5,680	$ 22,948,000
February	5,928	23,889,000
March	6,768	26,657,000
April	7,794	29,292,000
May	9,325	29,095,000
June	9,506	26,531,000
July	10,164	24,630,000
August	9,659	25,121,000
September	9,732	24,000,000
October	8,537	23,129,000
November	7,391	20,205,000
December	6,215	19,352,000
Total	96,699	$294,849,000

Farm and Non-Farm Tractor Shipments by Years, 1949-1955

In Units and Their Wholesale Value

As reported by the Industry Division, Bureau of the Census

Year	TOTAL SHIPMENTS Number	TOTAL SHIPMENTS Value (Add 000)	TOTAL SHIPMENTS Average Value per Tractor	FOR DOMESTIC USE Number	FOR DOMESTIC USE Value (Add 000)	FOR DOMESTIC USE Average Value per Tractor	FOR EXPORT Number	FOR EXPORT Value (Add 000)	FOR EXPORT Average Value per Tractor
WHEEL TYPE†									
1955*	324,916	$517,892	$1,594*	284,690	N.A.	....	40,226	N.A.	....
1954	256,692	443,267	1,727	212,832	$360,404	$1,693	43,860	$ 82,863	$1,889
1953	390,366	590,322	1,512	336,401	494,981	1,471	53,965	95,341	1,767
1952	417,177	615,676	1,476	360,366	516,847	1,434	56,811	98,829	1,740
1951	559,973	758,001	1,354	472,821	631,027	1,335	87,152	126,974	1,457
1950	499,917	574,295	1,149	425,815	478,238	1,123	74,102	96,057	1,296
1949	545,368	572,430	1,050	445,030	454,565	1,021	100,338	117,865	1,175
TRACKLAYING TYPE									
1955	48,684	$357,112	$7,335	30,833	N.A.	....	17,851	N.A.	....
1954	40,374	267,918	6,636	23,783	$158,580	$6,668	16,591	$109,338	$6,590
1953	50,597	328,696	6,496	31,692	206,698	6,522	18,905	121,998	6,453
1952	48,155	280,841	5,832	33,596	199,352	5,935	14,559	81,489	5,597
1951	49,142	259,960	5,290	33,507	186,017	5,551	15,635	73,943	4,729
1950	44,600	223,487	5,011	29,167	150,205	5,150	15,433	73,282	4,748
1949	43,849	199,423	4,548	28,260	129,234	4,573	15,589	70,189	4,502
GARDEN TYPE									
1955	N.A.	N.A.	....	N.A.	N.A.	....	N.A.	N.A.	....
1954	N.A.	N.A.	....	N.A.	N.A.	....	N.A.	N.A.	....
1953	211,798	$ 29,269	$ 124	205,120	$ 28,246	$ 138	6,678	$ 1,023	$ 153
1952	202,492	28,098	139	197,540	27,344	138	4,952	754	152
1951	168,352	24,758	147	164,323	24,069	146	4,029	689	171
1950	153,827	22,249	145	149,704	21,529	144	4,123	720	175
1949	131,427	21,028	160	126,331	20,075	159	5,096	953	187
TOTAL—ALL TYPES									
1955**	373,600	$875,004	....	315,523	N.A.	....	58,077	N.A.	....
1954‡	297,066	711,185	....	236,615	$518,984	....	60,451	$192,201	....
1953	652,761	948,287	....	573,213	729,925	....	79,548	218,362	....
1952	667,824	924,615	....	591,502	743,543	....	76,322	181,073	....
1951	777,467	1,042,719	....	670,651	841,113	....	106,816	201,606	....
1950	698,344	820,031	....	604,686	649,972	....	93,658	170,059	....
1949	720,644	792,881	....	599,621	603,874	....	121,023	189,007	....

*—Does not include contractors off-highway type. **—Does not include contractors off-highway and garden type tractors.
†—Excluding garden tractors. ‡—Does not include garden tractors. N.A.—Not available.

Tractor Shipments by Type and Hp Ratings

In Units and Their Wholesale Value

As reported by the Industry Division, Bureau of the Census

Type and Hp	1955 Number of Units	1955 Value (Add 000)	1954 No. of Mftrs.	1954 Number of Units	1954 Value (Add 000)	1953 No. of Mftrs.	1953 Number of Units	1953 Value (Add 000)
Wheel Type								
All Purpose								
9-24 belt hp	25,282	$ 22,180	7	35,020	$ 33,666	8	85,777	$ 82,946
25-29 belt hp	22,885	24,795	8	4,415	5,709	9	17,017	21,375
30-34 belt hp	63,296	82,344	9	82,646	101,204	11	129,001	152,375
35-39 belt hp	30,981	49,524	6	8,493	13,149	10	25,610	40,870
40-44 belt hp	70,353	105,532	8	21,545	35,754	6	19,202	32,989
45-49 belt hp	39,986	70,076	9	56,416	105,751	11	69,540	128,504
50 belt hp and over	42,716	91,256	8	16,624	33,521			
Total—All Purpose	295,499	$445,707	14	225,159	$328,754	20	346,147	$459,059
Other than All Purpose								
9-29 belt hp	3,448	$ 2,924	7	2,032	$ 2,064	7	3,354	$ 3,644
30-34 belt hp	1,847	3,614	6	2,039	3,782	7	4,028	6,050
35-44 belt hp	2,895	5,734	7	4,651	7,947	9	7,202	11,169
45-49 belt hp	2,508	5,276	5	3,508	7,203	4	8,292	14,870
50-54 belt hp	7,767	17,491	7	5,751	13,461	7	11,852	29,019
55 belt hp and over	10,952	37,146	6	10,533	33,255	4	6,547	22,830
Total—Other than All Purpose	29,417	$ 72,185	13	28,514	$ 67,712	17	41,275	$ 87,582
Wheel Type (Contractors' Off-Highway)								
115-199 brake hp	....	....	5	1,509	$ 19,685	7	1,582	$ 20,642
200 brake hp and over	....	....	6	1,510	27,116	7	1,362	23,039
Total—Contractors' Off-Highway	N.A.	N.A.	6	3,019	$ 46,801	7	2,944	$ 43,681
Total—Wheel Type	324,916	$517,892	17	256,692	$443,267	25	390,366	$590,322
Tracklaying Type								
9-24 drawbar hp	6,276	$ 9,993	6	5,453	$ 8,908	7	6,403	$ 10,104
25-34 drawbar hp	4,011	10,814	4	4,930	16,238	5	5,857	18,215
35-49 drawbar hp	16,840	86,965	4	13,415	69,040	4	15,959	77,016
50-79 drawbar hp	9,183	74,991	4	7,678	63,017	4	9,194	69,298
80-119 drawbar hp	6,276	68,322	3	4,998	51,857	3	7,400	71,256
120 drawbar hp and over	6,104	106,027	4	3,900	58,858	4	5,784	82,807
Total—Tracklaying Type	48,684	$357,112	10	40,374	$267,918	11	50,597	$328,696
Total—Wheel and Tracklaying Types	373,600	$875,004	39	297,066	$711,185	36	440,963	$919,018
Garden Tractors incl. Motor Tillers	N.A.	N.A.	N.A.	N.A.	N.A.	55	211,798	$ 29,269
Total—All Tractors	N.A.	N.A.	..	N.A.	N.A.	..	652,761	$948,287

N.A.—Not available.

CANADIAN STATISTICS

From Canadian Automobile Chamber of Commerce

Motor Vehicle Production in Canada

In Units and Their Value

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL	
	Number of Units†	Wholesale Value	Average Wholesale Value	Number of Units†	Wholesale Value	Average Wholesale Value	Number of Units	Wholesale Value
1925	135,573	$ 86,158,773	$ 635	26,397	$ 12,234,486	$ 463	161,970	$ 98,393,259
1926	166,887	106,000,203	635	37,840	16,629,334	439	204,727	122,629,537
1927	146,421	100,962,211	689	32,633	14,942,017	458	179,054	115,904,228
1928	197,848	127,263,877	642	44,206	21,913,122	'496	242,054	149,176,999
1929	203,307	134,023,280	659	59,318	29,474,395	497	262,625	163,497,675
1930	121,337	75,253,581	620	32,035	16,513,225	515	153,372	91,766,806
1931	65,072	42,634,173	655	17,487	10,330,763	591	82,559	52,964,936
1932	50,694	32,490,129	641	10,095	6,070,667	601	60,789	38,560,796
1933	53,849	32,568,268	605	12,003	6,062,195	505	65,852	38,630,463
1934	92,647	57,260,156	618	24,205	12,770,318	528	116,852	70,030,474
1935	135,562	79,209,276	584	37,315	19,803,771	531	172,877	99,013,047
1936	128,369	76,814,258	598	33,790	19,140,946	566	162,159	95,955,204
1937	153,946	93,368,282	610	54,417	30,389,011	558	207,463	123,757,293
1938	123,761	81,661,687	660	42,325	26,497,038	626	166,086	108,158,725
1939	108,369	71,101,304	656	47,057	28,072,712	597	155,426	99,173,916
1940	109,911	83,544,445	760	113,102	91,191,516	'806	223,013	174,735,961
1941	96,603	81,167,694	840	173,588	163,414,253	941	270,191	244,581,947
1942	12,236	10,305,013	842	216,057	229,103,128	1,060	228,293	239,408,741
1943	.....	.....	....	178,064	222,393,092	1,249	178,064	222,393,092
1944	.....	.....	....	158,038	213,259,582	1,349	158,038	213,259,582
1945	1,868	1,638,118	877	130,777	167,103,012	1,278	132,645	168,741,130
1946	91,871	82,847,330	902	79,657	81,204,338	1,019	171,528	164,051,668
1947	167,257	182,161,183	1,089	90,758	116,357,486	1,282	258,015	298,518,669
1948	166,819	210,799,512	1,264	96,941	137,228,722	1,415	263,760	348,028,234
1949	193,556	277,660,998	1,434	99,028	146,697,354	1,481	292,584	424,358,352
1950	284,076	447,029,182	1,574	106,026	163,942,858	1,546	390,102	610,972,040
1951	282,714	438,613,532	1,551	132,706	212,806,695	1,604	415,420	651,420,227
1952	283,534	417,654,448	1,473	150,176	253,247,296	1,680	433,710	670,901,744
1953	360,385	539,524,001	1,497	120,574	199,082,949	1,651	480,959	738,606,950
1954	287,191	436,826,440	1,521	69,892	122,291,809	1,750	357,083	559,112,249
1955	372,071	.....	....	79,727	.....	....	451,802	.....

†—Production figures include all wheeled vehicles for military use. Universal carriers and scout cars are not included.

Canadian Motor Vehicle Production by Months

Month	1955	1954	1953	1952	1951	1950	1949	1948	1947
January	29,403	40,310	35,894	34,232	39,204	28,527	13,863	16,715	18,700
February	31,827	44,268	42,904	32,448	40,592	30,137	17,197	16,382	20,331
March	32,380	45,634	51,990	34,209	47,779	30,051	25,566	27,112	22,491
April	66,944	45,622	52,420	46,908	41,060	26,386	26,685	24,243	21,891
May	60,882	37,284	50,590	42,690	42,911	35,281	26,708	21,368	21,665
June	56,685	30,229	49,800	41,110	36,229	41,383	30,096	23,362	21,137
July	48,067	26,128	48,691	34,314	30,294	40,131	25,382	15,106	21,907
August	25,014	17,249	22,640	22,853	21,833	24,272	20,475	16,959	15,659
September	19,077	13,982	35,021	41,065	29,861	38,035	30,894	23,775	24,205
October	26,299	10,624	35,898	41,659	32,462	35,573	28,125	25,057	25,479
November	28,860	18,176	19,931	31,340	29,461	30,322	19,721	26,794	23,240
December	28,873	27,577	35,080	30,882	23,734	30,004	27,871	26,888	21,310
Total	454,311	357,083	480,959	433,710	415,420	390,102	292,584	263,760	258,015

1954 Canadian Motor Vehicle Registrations—by Provinces

Province	Passenger Cars	Motor Trucks	Motor Buses	Other Motor Vehicles†	Total Motor Vehicles	Motor-cycles	Trailers
Newfoundland	24,000	9,354	183	566	34,108	315	289
Prince Edward Island	12,551	5,724	14	2,419	20,708	140	1,261
Nova Scotia	90,068	36,326	436	5,056	131,886	1,201	5,212
New Brunswick	67,624	22,443	443	7,527	98,037	1,021	5,467
Quebec	484,909	150,654	3,611	20,267	659,441	14,703	38,758
Ontario	1,187,725	285,829	3,972	.....	1,477,526	12,454	86,839
Manitoba	152,049	54,755	186	2,034	209,024	1,577	12,201
Saskatchewan	162,980	101,719	109	1,923	266,731	642	10,852
Alberta	222,305	111,894	2,489	.....	336,688	1,853	1,387
British Columbia	276,161	88,637	1,229	3,169	369,196	3,744	18,205
Yukon and N.W. Territory	2,267	1,848	15	148	4,278	11	319
Total—Canada—1954	2,682,639	869,183	12,692	43,109	3,607,623	37,661	180,790
Total—Canada—1953	2,513,138	825,476	12,162	40,827	3,431,797	40,194	161,915
Total—Canada—1952	2,296,479	770,050	12,021	36,647	3,157,269	42,072	146,579
Total—Canada—1951	2,094,646	688,631	12,090	29,861	2,825,228	43,166	135,271

†—Includes road tractors, ambulances, fire trucks, hearses, government and municipal vehicles.



NEW REGISTRATIONS

★ ★ ★ ★ **PASSENGER CARS • TRUCKS**

New Passenger Car Registrations by Makes, by Years

Based on data from R. L. Polk & Co.

Make of Car	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total	1951 Units	1951 % of Total
Hudson	43,212	.60	35,824	.65	66,797	1.16	78,509	1.89	96,847	1.91
Nash	93,541	1.31	82,729	1.49	137,507	2.40	142,520	3.43	140,035	2.77
Total—American Motors	**136,753**	**1.91**	**118,553**	**2.14**	**204,304**	**3.56**	**221,029**	**5.32**	**236,882**	**4.68**
Chrysler	156,458	2.18	101,741	1.84	153,756	2.68	113,392	2.73	149,435	2.95
De Soto	118,062	1.65	76,739	1.39	122,342	2.13	91,677	2.20	112,643	2.23
Dodge	284,323	3.97	154,789	2.80	288,812	5.03	246,464	5.93	298,603	5.90
Plymouth	647,352	9.03	381,078	6.87	600,447	10.46	433,134	10.41	542,649	10.72
Total—Chrysler Motors	**1,206,195**	**16.83**	**714,347**	**12.90**	**1,165,357**	**20.30**	**884,667**	**21.27**	**1,103,330**	**21.80**
Continental	606	.01	....	....	....	....	....	....	....	....
Ford	1,573,276	21.94	1,400,440	25.30	1,116,267	19.45	732,481	17.61	862,309	17.04
Lincoln	35,017	.49	36,251	.65	39,169	.68	29,110	.70	25,816	.51
Mercury	371,837	5.19	269,926	4.88	287,717	5.02	185,883	4.47	233,339	4.61
Total—Ford Motor	**1,980,736**	**27.63**	**1,706,617**	**30.83**	**1,443,153**	**25.15**	**947,474**	**22.78**	**1,121,464**	**22.16**
Buick	737,879	10.29	513,497	9.28	454,320	7.92	310,806	7.47	392,285	7.75
Cadillac	141,038	1.97	110,328	1.99	98,612	1.72	87,806	2.11	97,093	1.92
Chevrolet	1,640,681	22.88	1,417,453	25.61	1,342,480	23.39	852,542	20.50	1,067,042	21.08
Oldsmobile	589,515	8.22	407,150	7.35	305,593	5.32	218,189	5.25	273,472	5.40
Pontiac	530,007	7.39	358,167	6.47	385,692	6.72	266,351	6.41	337,821	6.68
Total—General Motors	**3,639,120**	**50.75**	**2,806,595**	**50.70**	**2,586,697**	**45.07**	**1,735,694**	**41.74**	**2,167,713**	**42.83**
Packard	52,103	.73	38,396	.69	71,079	1.24	66,346	1.60	66,999	1.32
Studebaker	95,761	1.34	95,914	1.74	161,257	2.81	157,902	3.80	205,514	4.08
Total—S.-P. Corp.	**147,864**	**2.07**	**134,310**	**2.43**	**232,336**	**4.05**	**224,248**	**5.40**	**272,513**	**5.40**
Henry J	....	....	....	....	11,385*	.20	30,284*	.73	51,372	1.02
Kaiser	959	.01	8,889	.16	22,825	.40	41,022	.99	52,286	1.03
Willys	6,267	.09	17,002	.31	42,433	.74	41,016	.99	26,049	.51
Total—Willys Motors	**7,226**	**.10**	**25,891**	**.47**	**76,643**	**1.34**	**112,322**	**2.71**	**129,707**	**2.56**
Crosley	....	....	....	....	....	....	2,679	.06	5,304	.10
Misc. Domestic	356	....	3,766	.07	1,538	.03	982	.02	3,162	.06
Total—All Others	**356**	....	**3,766**	**.07**	**1,538**	**.03**	**3,661**	**.08**	**8,466**	**.16**
British Austin	1,596	.02	1,528	.03	3,087	.05	4,804	.12	3,800	.08
British Ford	2,189	.03	1,622	.03	3,644	.06	3,854	.09	3,508	.07
British Hillman	2,778	.04	2,420	.04	4,506	.08	4,782	.11	....	....
British Jaguar	3,573	.05	3,365	.06	3,914	.07	3,349	.08	....	....
British MG	3,001	.04	3,454	.06	6,606	.11	7,449	.18	....	....
Volkswagon	28,907	.40	6,343	.11	....	....	....	....	....	....
Misc. Foreign	9,614	.13	6,643	.13	7,204	.13	5,061	.12	13,520	.26
Total—Foreign	**51,658**	**.71**	**25,385**	**.46**	**28,961**	**.50**	**29,299**	**.70**	**20,828**	**.41**
Total—All Makes	**7,169,908**	**100.00**	**5,535,464**	**100.00**	**5,738,989**	**100.00**	**4,158,394**	**100.00**	**5,060,903**	**100.00**

*—Includes Allstate. †—Includes Frazer

New Truck Registrations by Makes, by Years

Based on data from R. L. Polk & Co.

Make of Truck	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total	1951 Units	1951 % of Total
Autocar	*	....	1,041	.13	1,713	.18	1,595	.19	2,112	.21
Brockway	1,144	.12	1,340	.18	2,080	.22	1,752	.22	2,182	.22
Chevrolet	329,791	34.46	293,079	35.34	327,960	35.22	272,249	33.51	350,344	34.91
Diamond T	3,697	.39	2,701	.33	3,398	.36	3,420	.42	4,508	.45
Divco	3,298	.34	2,505	.30	2,569	.28	2,752	.34	3,752	.37
Dodge	66,208	6.92	60,658	7.32	82,345	8.85	102,129	12.58	106,600	10.62
Federal	58	....	248	.03	986	.11	841	.10	1,008	.10
Ford	295,900	30.93	267,799	32.30	266,027	28.60	179,523	22.11	250,802	24.98
F.W.D.	315	.03	393	.05	359	.04	543	.07	501	.05
G.M.C.	84,877	8.87	66,664	8.04	82,296	8.85	79,612	9.80	100,285	9.99
International	100,441	10.50	84,222	10.15	95,404	10.25	92,788	11.42	95,184	9.48
Kenworth	1,182	.12	697	.08	747	.08	705	.09	668	.07
Mack	10,932	1.14	6,098	.74	6,890	.74	7,138	.88	9,794	.98
Peterbilt	424	.04	344	.04	332	.04	236	.03	†	....
Pontiac	....	....	....	....	468	.05	541	.07	908	.09
Reo	3,121	.33	2,283	.28	3,498	.38	3,393	.42	3,427	.34
Studebaker	10,817	1.13	10,193	1.23	22,473	2.42	28,985	3.57	32,675	3.25
White	14,372	1.50	10,340	1.25	12,261	1.32	10,858	1.34	12,260	1.22
White Sterling	†	....	†	....	†	....	250	.03	334	.03
Willys—Jeep	10,441	1.09	7,598	.92	9,247	.99	8,594	1.06	9,002	.90
Willys—Truck	16,811	1.76	9,925	1.20	8,465	.91	11,762	1.45	15,290	1.52
All Others	3,174	.33	993	.11	794	.08	2,433	.30	2,214	.22
Total	**957,001**	**100.00**	**829,101**	**100.00**	**930,312**	**100.00**	**812,099**	**100.00**	**1,003,850**	**100.00**

*—Included with White. †—Included with All Others.

New Car Registrations by Months, 1951-1955

Based on data from R. L. Polk & Co.

	1955*		1954*		1953		1952		1951	
	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
January	440,024	6.14	340,698	6.15	386,221	6.73	301,379	7.25	472,766	9.34
February	476,254	6.64	369,682	6.68	396,558	6.91	295,459	7.10	430,797	8.51
March	636,457	8.88	480,641	8.68	486,368	8.47	322,857	7.76	512,599	10.13
April	627,636	8.75	508,102	9.18	528,278	9.20	374,288	9.00	467,313	9.23
May	660,161	9.21	520,958	9.41	540,575	9.42	422,217	10.15	470,446	9.30
June	679,097	9.47	596,719	10.78	542,025	9.45	423,655	10.19	454,665	8.98
July	645,391	9.00	474,316	8.57	533,783	9.30	340,454	8.19	406,333	8.03
August	652,300	9.10	440,312	7.95	502,430	8.75	215,668	5.19	424,422	8.39
September	651,808	9.09	407,844	7.37	453,806	7.91	318,870	7.67	406,217	8.03
October	572,640	7.99	389,352	7.03	504,697	8.79	383,385	9.22	373,162	7.37
November	503,286	7.02	378,513	6.84	450,311	7.85	360,256	8.66	332,099	6.56
December	624,854	8.71	628,327	11.36	413,927	7.22	399,906	9.62	310,084	6.13
Total	7,169,908	100.00	5,535,464	100.00	5,738,989	100.00	4,158,394	100.00	5,060,903	100.00

*—Monthly totals as reported by R. L. Polk & Co., adjusted to conform to year-to-date totals.

New Truck Registrations by Months, 1951-1955

Based on data from R. L. Polk & Co.

	1955*		1954		1953		1952		1951	
	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total	Units	% of Total
January	62,231	6.50	60,706	7.32	72,606	7.80	59,661	7.35	88,058	8.77
February	56,204	5.87	60,836	7.34	68,616	7.38	59,285	7.30	78,581	7.83
March	64,521	6.74	72,578	8.75	79,672	8.57	63,364	7.80	86,287	8.60
April	79,071	8.26	75,332	9.09	91,127	9.79	73,461	9.05	84,961	8.46
May	82,081	8.58	78,209	9.43	86,274	9.27	71,690	8.82	90,267	9.03
June	90,005	9.40	85,858	10.36	77,189	8.30	71,471	8.80	87,461	8.71
July	84,383	8.82	64,993	7.84	76,161	8.19	72,134	8.88	84,021	8.37
August	92,079	9.62	64,173	7.74	76,642	8.24	57,786	7.12	87,646	8.73
September	89,891	9.39	66,174	7.98	78,319	8.42	65,381	8.05	84,814	8.45
October	87,262	9.12	69,234	8.35	82,625	8.88	77,486	9.54	92,281	9.19
November	75,540	7.89	64,123	7.73	72,422	7.78	70,477	8.68	76,517	7.62
December	93,733	9.79	66,885	8.07	68,659	7.38	69,903	8.61	62,596	6.24
Total	957,001	100.00	829,101	100.00	930,312	100.00	812,099	100.00	1,003,850	100.00

*—Monthly totals as reported by R. L. Polk & Co., adjusted to conform to year-to-date totals.

New Motor Vehicle Registrations by States, 1953-1955

Based on data from R. L. Polk & Co.

State	NEW PASSENGER CARS			NEW TRUCKS			TOTAL MOTOR VEHICLES		
	1955	1954	1953	1955	1954	1953	1955	1954	1953
Alabama	101,651	72,893	71,078	21,652	17,247	19,653	123,303	90,140	90,731
Arizona	37,303	24,999	24,926	8,916	7,324	7,160	46,219	32,323	32,086
Arkansas	49,573	37,589	41,599	16,669	16,102	18,357	66,242	53,691	59,956
California	665,892	434,789	452,769	88,376	63,966	69,345	754,268	498,755	522,114
Colorado	61,925	46,007	44,558	12,759	10,342	11,180	74,684	56,349	55,738
Connecticut	105,879	86,202	87,629	9,071	7,487	8,214	114,950	93,689	95,843
Delaware	22,940	17,101	18,498	3,449	2,527	2,734	26,389	19,628	21,232
District of Columbia	34,729	25,169	24,892	2,606	2,187	2,728	37,335	27,356	27,620
Florida	195,468	131,433	120,439	28,160	22,072	23,340	223,628	153,505	143,779
Georgia	139,382	98,437	94,643	26,879	24,601	23,441	166,261	123,038	118,084
Idaho	24,272	19,187	23,776	6,849	5,976	7,607	31,121	25,163	31,383
Illinois	460,883	398,306	406,069	39,786	37,376	43,436	500,669	435,682	449,505
Indiana	229,951	172,344	182,962	28,976	24,212	29,108	258,927	196,556	212,070
Iowa	108,294	98,534	100,797	16,770	18,308	20,190	125,064	116,842	120,987
Kansas	99,292	86,826	83,127	16,616	16,371	18,277	115,908	103,197	101,404
Kentucky	86,105	66,927	72,423	16,297	15,658	18,525	102,402	82,585	90,948
Louisiana	101,265	83,500	77,655	21,781	18,539	19,795	123,046	102,039	97,450
Maine	30,191	23,266	24,283	6,198	5,023	5,559	36,389	28,289	29,842
Maryland	118,567	87,142	89,494	11,267	9,881	11,199	129,834	97,023	100,693
Massachusetts	177,672	155,881	159,527	13,879	12,530	12,291	191,551	168,411	171,818
Michigan	512,526	375,625	423,454	41,034	34,776	40,795	553,559	410,401	464,249
Minnesota	129,423	116,696	123,661	17,526	17,223	19,054	146,949	133,919	142,715
Mississippi	61,807	47,009	45,176	19,385	18,180	18,374	81,192	65,180	63,550
Missouri	178,704	147,737	159,971	25,674	23,498	29,067	204,378	171,235	189,038
Montana	27,045	22,703	24,869	8,478	7,201	8,001	35,523	29,904	32,870
Nebraska	59,626	53,216	58,278	11,707	11,571	13,123	71,333	64,787	71,401
Nevada	12,067	8,052	7,846	2,634	2,161	2,130	14,701	10,213	9,976
New Hampshire	23,048	18,138	17,680	3,282	2,899	2,924	26,330	21,037	20,604
New Jersey	258,527	216,076	211,073	22,826	21,047	23,500	281,353	237,123	234,573
New Mexico	30,501	22,508	21,248	8,597	7,059	6,428	39,098	29,567	27,676
New York	634,859	481,078	485,032	50,720	41,352	47,704	685,579	522,430	532,736
North Carolina	132,114	96,986	110,364	25,181	22,130	26,685	157,295	119,116	137,049
North Dakota	22,055	21,654	24,075	5,021	5,221	6,128	27,076	26,875	30,203
Ohio	443,762	331,768	359,056	42,315	35,857	42,510	486,077	367,625	401,566
Oklahoma	94,347	76,428	78,336	20,205	18,656	22,257	114,552	95,084	100,593
Oregon	81,402	54,814	60,858	15,859	11,941	13,415	97,261	66,755	74,273
Pennsylvania	463,339	359,822	413,057	45,452	38,654	47,965	508,791	398,476	461,022
Rhode Island	32,537	27,183	27,728	3,155	2,444	2,662	35,692	29,627	30,390
South Carolina	60,217	47,052	54,251	10,113	9,832	12,397	70,330	56,884	66,648
South Dakota	24,112	22,164	21,598	5,131	4,908	5,465	29,243	27,072	27,063
Tennessee	118,864	91,224	88,369	18,736	18,258	20,881	137,600	109,482	109,250
Texas	429,931	349,509	321,374	80,756	72,059	74,857	510,687	421,568	396,231
Utah	27,262	19,366	21,884	5,541	4,429	4,748	32,803	23,795	26,632
Vermont	14,653	11,926	12,672	3,030	2,514	2,705	17,683	14,440	15,377
Virginia	135,549	113,992	108,232	20,272	17,373	17,685	155,821	131,365	125,917
Washington	89,231	63,579	68,202	15,770	12,480	13,718	105,001	76,059	81,920
West Virginia	54,951	39,154	43,875	9,936	7,130	9,724	64,887	46,284	53,599
Wisconsin	151,246	120,572	132,309	16,769	16,329	18,794	168,215	136,901	151,103
Wyoming	14,970	12,910	13,317	4,740	4,190	4,477	19,710	17,100	17,794
Total	7,169,908	5,535,464	5,738,989	957,001	829,101	930,312	8,126,909	6,364,565	6,669,301

• NEW REGISTRATIONS •

1955 New Car Registrations by Price Classes—by Months†

Month	Under $2,000 Units	Under $2,000 % of Total	$2,001-$2,500 Units	$2,001-$2,500 % of Total	$2,501-$3,500 Units	$2,501-$3,500 % of Total	Over $3,500 Units	Over $3,500 % of Total	Total Units	Total % of Total
January	220,677	50.46	142,622	32.61	58,058	13.27	16,013	3.66	437,370	100.00
February	259,080	54.67	145,286	30.66	55,428	11.69	14,122	2.98	473,917	100.00
March	341,690	54.01	197,482	31.22	75,079	11.87	18,367	2.90	632,618	100.00
April	350,397	54.09	203,948	31.48	75,056	11.58	18,475	2.85	647,876	100.00
May	360,608	54.89	205,872	31.34	71,635	10.90	18,860	2.87	656,975	100.00
June	379,572	56.10	210,052	31.04	69,447	10.26	17,565	2.60	676,636	100.00
July	362,661	56.46	200,872	31.27	62,396	9.72	16,361	2.55	642,289	100.00
August	368,838	56.45	204,147	31.25	63,115	9.66	17,230	2.64	653,330	100.00
September	367,163	56.46	207,895	31.97	59,538	9.15	15,718	2.42	650,314	100.00
October	180,870	31.73	321,406	56.39	52,595	9.23	15,119	2.65	569,990	100.00
November	90,176	17.89	346,951	68.83	45,083	8.94	21,842	4.34	504,052	100.00
December	110,793	17.72	351,895	56.29	135,585	21.69	26,914	4.30	625,187	100.00
Total—1955	3,392,525	47.31	2,738,428	38.19	823,014	11.48	216,587	3.02	7,170,554	100.00
Total—1954	3,353,668	60.47	1,406,734	25.37	580,076	10.46	205,283	3.70	5,545,761	100.00

†—Based on new passenger car registrations of only American made cars, as reported by R. L. Polk & Co.

1955 Retail Dollar Volume of New Car Sales—by Price Classes*

Month	Under $2,000 Value	Under $2,000 % of Total	$2,001-$2,500 Value	$2,001-$2,500 % of Total	$2,501-$3,500 Value	$2,501-$3,500 % of Total	Over $3,500 Value	Over $3,500 % of Total	Total Value	Total % of Total
January	$ 419,736,496	42.69	$ 332,525,799	33.81	$ 165,470,308	16.83	$ 65,577,065	6.67	$ 983,309,668	100.00
February	492,455,808	47.05	338,962,944	32.38	157,438,480	15.04	57,827,454	5.53	1,046,684,686	100.00
March	648,720,330	46.42	460,423,183	32.94	213,546,408	15.28	74,861,146	5.36	1,397,551,067	100.00
April	664,765,841	46.50	476,700,344	33.35	212,915,332	14.89	75,103,553	5.26	1,429,485,070	100.00
May	683,916,663	47.41	480,121,765	33.28	202,135,622	14.01	76,465,690	5.30	1,442,639,740	100.00
June	719,814,514	48.77	490,036,605	33.20	195,168,548	13.22	70,937,593	4.81	1,475,957,260	100.00
July	688,531,802	49.22	469,716,516	33.58	174,906,399	12.50	65,821,080	4.70	1,398,975,797	100.00
August	700,834,041	49.24	476,632,114	33.48	176,884,824	12.43	69,074,296	4.85	1,423,425,275	100.00
September	697,435,467	49.38	485,463,864	34.38	166,891,548	11.82	62,422,771	4.42	1,412,213,650	100.00
October	340,213,731	26.85	718,914,177	56.73	146,243,900	11.54	61,844,224	4.88	1,267,216,032	100.00
November	174,078,960	15.07	758,834,153	65.69	131,848,915	11.41	90,405,035	7.83	1,155,167,063	100.00
December	214,440,914	14.74	751,117,341	51.62	377,273,732	25.93	112,204,541	7.71	1,455,036,528	100.00
Total—1955	$6,444,944,567	40.57	$6,239,448,805	39.27	$2,320,724,016	14.61	$882,544,448	5.55	$15,887,661,836	100.00
Total—1954	$6,172,487,368	52.32	$3,233,496,917	27.41	$1,594,123,461	13.51	$797,241,327	6.76	$11,797,349,073	100.00

*—Calculated on the basis of new registrations of American made cars only, in conjunction with the advertised delivered price at factory of four-door sedan or equivalent model.

1955 New Passenger Car Registrations, by Makes, by States

Based on data from R. L. Polk & Co.

State	Buick	Cadillac	Chevrolet	Chrysler	De Soto	Dodge	Ford	Hudson	Kaiser	Lincoln*	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	Misc. Dom.	Foreign	Total
Ala.	8,667	1,150	28,473	1,611	1,038	3,031	26,524	442	1	358	4,635	799	6,655	370	9,257	7,353	1,025	29	4	229	101,651
Ariz.	3,691	752	8,990	793	486	1,548	8,723	260	11	201	1,814	526	2,393	302	3,195	2,466	763	32	1	356	37,303
Ark.	3,563	634	13,020	656	507	1,650	13,473	273	4	178	2,569	338	3,804	185	4,631	3,456	566	34	2	30	49,573
Cal.	83,158	17,486	134,928	13,379	9,827	24,744	131,504	4,090	123	4,836	47,229	9,497	52,321	4,449	47,327	50,084	10,922	469	13	19,506	665,892
Col.	4,927	1,287	15,406	1,631	949	2,454	14,353	517	5	408	3,528	1,068	4,760	463	4,592	4,332	957	23	2	263	61,925
Conn.	10,222	2,243	21,045	3,347	1,750	4,707	21,275	971	15	579	4,942	2,273	9,095	1,147	10,687	7,972	1,602	83	1	1,923	105,879
Del.	2,262	409	5,845	387	318	863	5,678	20	1	130	1,026	141	1,535	120	2,230	1,605	243	16	2	109	22,940
D. of C.	3,257	869	7,884	807	691	1,314	6,224	142	6	148	1,433	328	3,040	301	4,425	3,112	353	14	.....	381	34,729
Fla.	16,707	4,931	50,078	3,747	2,346	6,132	48,331	1,012	9	1,260	9,676	1,696	16,256	1,219	14,313	13,333	2,376	162	10	1,874	195,468
Ga.	11,161	1,861	38,676	1,931	1,286	4,608	37,277	213	24	436	6,600	955	9,699	642	10,478	11,326	1,800	78	23	308	139,382
Idaho	2,538	474	5,374	670	462	1,200	4,607	313	6	159	1,418	459	1,864	210	1,859	1,948	617	38	.....	56	24,272
Ill.	51,913	11,010	100,889	11,049	7,410	17,015	89,207	5,765	45	2,482	24,758	7,423	44,294	3,579	44,466	32,372	5,722	323	53	1,108	460,883
Ind.	24,533	3,879	51,721	4,926	4,460	9,628	50,095	1,435	21	954	10,673	3,186	18,319	1,637	20,283	17,798	5,752	206	3	442	229,951
Iowa	9,616	1,625	28,353	2,406	1,475	4,448	25,722	634	14	434	5,405	1,292	8,010	697	8,974	7,296	1,611	59	8	215	108,294
Kan.	8,618	1,591	24,987	1,948	1,290	3,688	23,315	735	16	411	5,006	1,705	7,052	665	8,002	8,738	1,289	69	5	162	99,292
Ky.	8,549	997	23,517	1,341	1,032	3,152	21,410	365	9	192	3,733	784	6,225	434	7,336	5,887	1,000	69	3	70	86,105
La.	7,390	1,385	26,737	1,443	1,046	3,067	27,675	207	8	345	4,420	671	8,047	481	8,293	8,236	1,578	52	1	183	101,265
Me.	2,427	411	7,578	577	581	1,280	6,564	340	7	132	1,379	685	1,648	213	3,286	2,166	566	56	7	288	30,191
Md.	10,761	1,798	29,215	2,284	2,160	4,992	25,802	576	7	463	5,274	1,113	8,722	929	13,524	8,578	1,733	58	2	576	118,567
Mass.	17,121	3,002	37,062	4,154	3,301	6,642	39,227	1,385	20	862	7,538	4,248	16,995	1,308	18,092	12,775	1,937	115	8	1,880	177,672
Mich.	59,170	11,315	121,580	9,478	7,483	21,334	118,578	2,039	31	2,459	26,739	4,843	39,645	3,417	42,528	36,530	3,942	223	14	1,177	512,525
Minn.	11,760	2,256	30,279	2,716	2,194	4,940	31,456	890	13	520	6,359	1,472	12,186	1,118	10,705	8,059	2,220	90	1	189	129,423
Miss.	4,886	828	17,144	822	787	2,020	15,895	181	7	207	2,829	317	3,939	271	6,386	4,483	742	28	2	32	61,807
Mo.	15,167	2,716	43,332	2,819	3,002	5,690	41,447	519	24	653	9,275	2,047	14,211	842	19,579	14,497	2,381	103	10	420	178,704
Mont.	1,837	511	6,651	675	387	1,354	6,072	332	6	156	1,389	388	2,071	306	2,105	1,901	659	28	1	116	27,045
Neb.	6,290	1,009	13,916	1,252	841	2,338	15,113	244	6	240	3,270	550	4,302	424	4,979	3,924	822	49	.....	57	58,626
Nev.	1,103	366	2,141	274	229	471	2,432	65	1	80	671	125	1,143	213	936	922	624	4	1	246	12,067
N. H.	1,773	295	5,693	462	360	1,001	4,921	371	3	139	1,084	563	1,505	166	2,139	1,853	409	30	2	279	23,048
N. J.	31,062	6,448	50,986	8,184	6,351	11,386	49,720	1,382	27	1,411	14,240	3,005	22,352	2,574	26,315	17,560	3,237	164	4	2,119	258,527
N. M.	3,181	556	7,664	670	393	1,102	6,601	77	1	224	1,822	276	2,344	229	2,098	2,620	495	21	1	126	30,501
N. Y.	69,969	15,741	127,106	19,951	13,307	28,082	119,719	3,426	164	3,581	31,476	9,361	60,512	5,869	65,864	45,651	7,257	616	98	7,109	634,859
N. C.	11,757	1,907	32,845	2,695	2,030	4,421	34,343	566	15	496	5,995	1,113	10,131	670	10,866	10,344	1,535	138	3	244	132,114
N. D.	1,545	313	5,436	561	474	1,112	5,314	109	3	97	1,163	269	1,714	192	2,241	1,145	343	15	1	8	22,055
Ohio	48,964	8,424	92,745	10,392	8,747	21,701	98,113	2,369	92	2,202	23,476	5,259	35,996	3,868	39,824	34,605	4,983	713	21	1,268	443,762
Okla.	8,932	1,583	25,049	1,215	1,155	2,535	22,748	359	5	401	5,132	879	8,081	403	6,556	7,922	1,172	37	.....	183	94,347
Ore.	7,322	1,426	19,474	1,632	1,519	3,379	17,314	873	7	536	4,600	1,650	6,608	473	5,743	6,127	1,531	80	.....	1,108	81,402
Pa.	49,919	8,350	95,387	12,460	10,136	23,638	89,868	2,992	83	2,151	21,948	6,114	36,777	4,903	55,534	33,805	6,014	1,074	10	2,176	463,339
R. I.	2,817	743	6,945	845	641	1,282	6,376	310	2	175	1,513	820	2,790	267	4,008	2,087	530	25	3	358	32,537
S. C.	5,168	718	16,513	786	828	2,073	15,800	308	4	194	2,544	360	4,215	234	5,030	4,519	685	28	2	208	60,217
S. D.	2,366	375	5,791	506	307	1,132	5,530	192	6	102	1,260	397	1,799	271	2,232	1,368	400	47	1	30	24,112
Tenn.	10,603	1,449	30,608	1,655	1,433	4,055	29,388	406	3	330	5,566	968	10,298	589	11,179	8,806	1,280	73	1	174	118,864
Texas	41,236	8,108	116,765	6,461	4,124	11,652	103,226	1,161	24	2,108	23,580	2,505	36,660	1,620	30,402	34,731	4,780	150	8	630	429,931
Utah	3,095	580	5,497	684	675	1,204	5,497	177	1	161	1,602	295	2,558	187	2,153	2,322	290	19	1	264	27,262
Vt.	1,186	187	3,808	368	208	578	3,142	80	2	45	623	395	924	90	1,583	996	277	16	2	143	14,653
Va.	12,616	2,057	30,327	2,900	2,314	5,200	32,012	867	23	528	6,283	1,641	10,294	1,007	13,797	10,516	2,110	125	6	926	135,549
Wash.	8,655	1,305	19,650	1,932	1,824	4,355	18,930	736	10	464	4,144	2,305	6,674	802	7,651	6,540	1,656	79	.....	1,519	89,231
W. Va.	5,329	650	12,046	1,436	1,004	3,431	11,633	395	9	213	2,529	766	3,534	440	6,451	3,923	931	100	9	122	54,951
Wisc.	17,528	2,670	31,882	3,146	2,584	6,123	31,943	1,968	35	663	6,773	5,527	14,209	1,147	12,139	10,398	1,892	181	5	433	151,246
Wyo.	1,462	358	3,843	394	310	601	3,159	123	.....	119	896	144	1,309	160	1,059	1,020	152	26	1	34	14,970
Total	737,879	141,038	1,640,681	156,458	118,062	284,323	1,573,276	43,212	959	35,623	371,837	93,541	589,515	52,103	647,352	530,007	95,761	6,267	356	51,658	7,169,909

* Includes Continental.

Regional Sales of New Passenger Cars

Based on data from R. L. Polk & Co.

Zone	Region	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
1	New England	383,980	5.36	322,596	5.83	329,519	5.74	238,870	5.74
2	Middle Atlantic	1,356,725	18.92	1,056,976	19.09	1,109,162	19.33	793,847	19.09
3	South Atlantic	893,917	12.47	656,466	11.86	664,688	11.58	491,282	11.81
4	East North Central	1,798,367	25.07	1,398,615	25.27	1,503,850	26.20	1,060,581	25.51
5	East South Central	368,427	5.14	278,044	5.02	277,046	4.83	195,897	4.71
6	West North Central	621,506	8.67	546,827	9.88	571,507	9.96	402,934	9.69
7	West South Central	675,116	9.42	547,026	9.88	518,964	9.04	377,208	9.07
8	Mountain	235,345	3.28	175,732	3.17	182,424	3.18	143,182	3.44
9	Pacific	836,525	11.67	553,182	10.00	581,829	10.14	454,593	10.94
	Total—United States	7,169,908	100.00	5,535,464	100.00	5,738,989	100.00	4,158,394	100.00

Regional Sales of New Trucks

Based on data from R. L. Polk & Co.

Zone	Region	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total
1	New England	38,615	4.03	32,897	3.97	34,355	3.70	33,136	4.09
2	Middle Atlantic	118,998	12.43	101,053	12.19	119,169	12.81	101,520	12.51
3	South Atlantic	137,863	14.41	117,733	14.20	129,933	13.97	117,937	14.52
4	East North Central	169,080	17.67	148,550	17.92	174,643	18.77	142,399	17.53
5	East South Central	76,070	7.95	69,343	8.36	77,433	8.32	67,526	8.31
6	West North Central	98,445	10.29	97,100	11.71	111,304	11.96	97,540	12.01
7	West South Central	139,411	14.57	125,356	15.12	135,266	14.54	120,147	14.79
8	Mountain	58,514	6.11	48,682	5.87	51,731	5.56	48,889	6.02
9	Pacific	120,005	12.54	88,387	10.66	96,478	10.37	83,005	10.22
	Total United States	957,001	100.00	829,101	100.00	930,312	100.00	812,099	100.00

States comprising the various regions are: Zone 1: Conn., Mass., Me., N. H., R. I., Vt.—Zone 2: N. J., N. Y., Pa.—Zone 3: Del., D. of C., Fla., Ga., Md., N. C., S. C., W. Va.—Zone 4: Ill., Ind., Mich., Ohio, Wisc.—Zone 5: Ala., Ky., Miss., Tenn.—Zone 6: Iowa, Kan., Minn., Mo., Neb., N. D., S. D.—Zone 7: Ark., La., Okla., Tex.—Zone 8: Ariz., Colo., Ida., Mont., Nev., N. M., Utah, Wyo.—Zone 9: Cal., Ore., Wash.

1955 New Truck Registrations by Makes, by States

Based on data from R. L. Polk & Co.

State	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge	Fed-eral	Ford	FWD	GMC	Inter-na-tional	Ken-worth	Mack	Peter-bilt	Reo	Stude-baker	White	Willys Jeep	Willys Truck	All Others	Total
Alabama	.....	8,625	25	31	1,279	.....	6,769	.....	2,417	1,706	.....	248	.....	34	114	198	89	107	10	21,652
Arizona	.....	3,271	11	30	734	.....	2,422	4	1,044	636	18	41	1	17	159	47	147	284	50	8,916
Arkansas	.....	6,258	30	.....	903	.....	5,677	.....	1,947	1,390	1	50	.....	8	209	77	67	49	3	16,669
California	4	30,209	312	176	7,189	1	28,123	58	8,909	5,779	329	385	296	282	1,111	912	1,314	2,065	931	88,376
Colorado	.....	4,206	29	88	861	.....	3,478	6	1,222	1,168	35	99	11	44	168	122	493	695	34	12,759
Connecticut	23	2,689	102	62	652	.....	2,377	.....	755	1,123	.....	311	.....	60	109	343	140	234	91	9,071
Delaware	6	959	6	9	224	.....	828	.....	354	480	1	265	1	4	14	248	24	21	5	3,449
Dist. of Col.	2	863	13	28	253	.....	735	.....	337	236	.....	13	.....	30	4	39	22	24	7	2,606
Florida	1	9,639	78	156	1,621	.....	8,960	2	2,523	2,183	.....	553	2	131	358	598	489	719	147	28,160
Georgia	.....	10,047	31	13	1,761	.....	9,355	.....	2,343	2,173	1	289	.....	42	278	336	107	93	10	26,879
Idaho	.....	2,060	12	2	528	.....	1,686	3	826	840	20	46	.....	4	157	42	183	428	12	6,849
Illinois	.....	12,999	478	148	2,978	1	12,114	13	2,921	5,877	2	237	.....	131	443	547	367	370	160	39,786
Indiana	.....	10,059	133	91	1,841	.....	8,430	4	2,113	4,060	202	167	1	115	672	668	143	206	71	28,976
Iowa	2	5,474	127	44	1,076	.....	5,485	1	1,000	2,964	26	57	2	23	147	144	70	99	29	16,770
Kansas	.....	6,416	33	37	715	.....	5,530	1	1,409	1,879	1	4	.....	45	182	106	84	166	8	16,616
Kentucky	.....	6,148	34	21	929	1	5,134	3	1,736	1,454	.....	104	.....	33	160	152	190	195	3	16,297
Louisiana	.....	8,300	45	8	1,204	.....	7,885	1	1,772	1,800	.....	92	.....	10	233	170	158	103	10	21,781
Maine	3	1,992	15	28	369	.....	1,676	1	635	705	.....	158	.....	3	111	71	157	244	30	6,198
Maryland	29	3,769	43	52	1,025	1	3,567	2	652	1,269	.....	205	.....	64	118	251	74	121	25	11,267
Massachusetts	44	3,831	100	161	962	1	4,619	4	1,020	1,583	.....	311	.....	115	105	362	182	382	97	13,879
Michigan	1	14,297	202	286	3,359	2	14,624	3	3,734	2,460	.....	233	.....	246	319	347	362	494	65	41,034
Minnesota	.....	5,771	82	62	1,074	3	5,843	14	1,398	2,368	15	103	.....	42	247	102	119	255	28	17,526
Mississippi	.....	7,990	2	3	900	1	6,242	1	1,963	1,816	.....	63	.....	2	196	36	82	85	3	19,385
Missouri	.....	10,045	130	23	1,385	.....	7,982	3	2,389	2,762	7	90	.....	59	191	285	136	137	50	25,674
Montana	.....	2,576	3	10	539	.....	2,208	1	892	1,026	38	63	3	23	176	71	233	601	15	8,478
Nebraska	.....	3,522	142	33	727	1	3,584	6	955	1,845	86	43	21	24	114	143	103	203	55	11,707
Nevada	.....	733	1	.....	235	.....	687	.....	316	275	1	6	1	2	129	3	79	160	6	2,634
New Hampshire	8	969	8	16	247	.....	883	1	281	291	.....	134	.....	23	51	43	108	196	23	3,282
New Jersey	195	6,754	160	276	2,054	1	6,738	5	2,309	2,188	.....	598	.....	58	181	696	156	322	135	22,826
New Mexico	.....	3,400	17	.....	536	.....	2,325	2	949	668	24	114	5	6	102	47	165	232	5	8,597
New York	547	13,556	312	366	5,180	28	13,019	37	4,320	7,153	.....	1,466	.....	557	419	1,391	747	1,196	426	50,720
North Carolina	.....	10,050	36	26	1,465	1	8,070	3	2,176	1,759	.....	499	.....	31	341	368	175	156	25	25,181
North Dakota	.....	1,521	2	4	345	.....	1,432	.....	472	1,040	.....	1	.....	.....	58	6	42	96	2	5,021
Ohio	6	13,411	213	424	3,082	3	13,261	12	3,219	5,478	1	553	.....	184	391	966	488	530	93	42,315
Oklahoma	.....	7,898	22	20	990	.....	6,566	22	1,795	2,208	5	81	.....	30	197	150	98	115	8	20,205
Oregon	.....	4,674	83	25	1,000	.....	4,232	1	1,733	1,600	141	178	32	59	299	393	321	977	111	15,559
Pennsylvania	254	13,436	210	221	3,955	3	12,860	11	3,662	6,418	.....	1,253	.....	232	535	1,104	92	1,103	103	45,452
Rhode Island	4	1,108	45	15	200	.....	909	.....	175	399	.....	96	.....	21	30	73	19	43	18	3,155
South Carolina	.....	4,237	7	.....	715	.....	3,256	1	831	696	1	93	.....	1	86	107	40	34	8	10,113
South Dakota	.....	1,410	24	4	318	.....	1,576	.....	431	1,001	2	5	1	4	60	17	116	162	.....	5,131
Tennessee	.....	6,734	32	12	1,179	2	6,089	1	1,803	1,863	.....	271	.....	36	174	319	108	105	8	18,736
Texas	.....	33,864	142	31	3,797	2	26,354	2	5,573	7,159	86	494	1	53	730	1,249	939	527	53	80,756
Utah	.....	1,612	13	1	581	.....	1,439	.....	649	561	39	45	16	16	74	67	129	284	15	5,541
Vermont	6	820	9	7	207	2	739	.....	317	403	.....	14	.....	10	33	6	187	259	11	3,030
Virginia	9	7,227	24	54	1,439	1	6,402	2	1,660	1,724	.....	426	.....	102	257	340	235	331	39	20,272
Washington	.....	4,359	58	32	1,371	1	4,397	4	2,006	1,811	84	149	23	51	203	254	302	592	73	15,770
West Virginia	.....	3,192	17	10	896	.....	2,858	18	996	840	.....	129	.....	17	155	135	311	355	6	9,936
Wisconsin	.....	5,235	38	152	1,046	.....	5,306	54	1,392	2,809	2	93	1	32	154	191	180	228	56	16,969
Wyoming	.....	1,485	6	.....	282	.....	1,168	8	546	515	14	14	6	5	63	30	169	428	1	4,740
Total	1,144	329,791	3,697	3,298	66,208	58	295,900	315	84,877	100,441	1,182	10,932	424	3,121	10,817	14,372	10,441	16,811	3,174	957,001

New Truck Registrations—By Makes and G.V.W.

Based on data from R. L. Polk & Co.

	Year	5,000 lb. and less	5,001-10,000	10,001-14,000	14,001-16,000	16,001-19,500	19,501-26,000	Over 26,000	Total
BROCKWAY	1955	....	....	....	....	189	228	727	1,144
	1954	....	....	....	....	100	128	1,112	1,340
	1953	....	....	....	....	109	197	1,774	2,080
CHEVROLET	1955	189,808	53,904	12,615	73,464	....	....	....	329,791
	1954	161,383	56,206	12,635	62,856	....	....	....	293,079
	1953	188,739	64,398	15,115	59,708	....	....	....	327,969
DIAMOND T	1955	....	....	....	498	599	823	1,777	3,697
	1954	....	....	....	533	473	715	980	2,701
	1953	....	....	....	535	824	1,168	871	3,398
DIVCO	1955	....	2,415	883	....	....	....	....	3,298
	1954	....	1,899	606	....	....	....	....	2,505
	1953	....	2,011	558	....	....	....	....	2,569
DODGE	1955	22,009	24,055	1,865	9,903	6,833	1,210	333	66,208
	1954	26,081	15,161	1,708	11,406	4,884	974	444	60,658
	1953	37,500	19,865	4,867	12,523	6,353	639	598	82,345
FEDERAL	1955	....	....	....	....	11	30	15	56
	1954	....	....	....	....	23	129	96	248
	1953	....	....	2	7	251	426	300	986
FORD	1955	157,559	47,811	12,861	52,331	13,423	8,004	3,911	295,900
	1954	141,839	45,298	14,103	46,916	8,941	7,800	2,902	267,799
	1953	145,548	44,213	15,045	42,563	8,424	9,365	869	266,027
F.W.D.	1955	....	....	....	11	23	186	95	315
	1954	....	....	....	15	29	259	90	393
	1953	....	....	....	21	93	195	50	359
G.M.C.	1955	33,425	13,401	3,758	11,122	9,669	8,109	5,393	84,877
	1954	24,626	11,821	2,728	12,479	6,035	4,682	4,273	66,644
	1953	31,679	14,284	3,996	15,033	7,184	5,449	4,671	82,296
INTERNATIONAL	1955	29,466	15,315	3,351	16,825	14,663	8,928	11,893	100,441
	1954	30,007	12,603	2,497	14,131	10,565	7,197	7,222	84,222
	1953	32,258	16,423	2,902	17,053	11,406	8,118	6,244	95,404
KENWORTH	1955	....	....	....	....	....	....	1,182	1,182
	1954	....	....	....	....	....	....	697	697
	1953	....	....	....	....	....	....	747	747
MACK	1955	....	....	....	....	199	1,987	8,746	10,932
	1954	....	....	....	....	192	1,270	4,636	6,098
	1953	....	....	....	....	180	1,900	4,810	6,890
PETERBILT	1955	....	....	....	....	....	....	424	424
	1954	....	....	....	....	....	....	344	344
	1953	....	....	....	....	....	....	332	332
REO	1955	....	....	....	349	605	1,018	1,149	3,121
	1954	....	....	....	424	291	1,093	475	2,283
	1953	....	....	....	998	297	1,985	228	3,498
STUDEBAKER	1955	6,648	1,972	625	1,572	....	....	....	10,817
	1954	5,936	1,946	1,155	1,156	....	....	....	10,193
	1953	12,877	4,442	2,861	2,293	....	....	....	22,473
WHITE	1955	....	....	....	....	617	1,908	11,847	14,372
	1954	....	....	....	....	834	4,737	5,810	11,381
	1953	....	....	....	....	1,692	6,614	5,668	12,261
WILLYS-JEEP	1955	10,441	....	....	....	....	....	....	10,441
	1954	7,598	....	....	....	....	....	....	7,598
	1953	9,247	....	....	....	....	....	....	9,247
WILLYS-TRUCK	1955	8,012	8,799	....	....	....	....	....	16,811
	1954	3,099	6,826	....	....	....	....	....	9,925
	1953	1,372	7,003	....	....	....	....	....	8,465
ALL OTHERS	1955	2,227	1	9	2	5	157	773	947
	1954	520	....	....	3	9	107	354	993
	1953	777	3	7	5	7	187	276	1,262
TOTAL	1955	459,595	167,673	35,967	166,077	46,836	32,588	48,265	957,001
	1954	401,088	151,760	35,432	149,919	32,376	29,091	29,435	829,101
	1953	460,997	172,732	45,353	150,729	36,820	36,243	27,438	930,312
	1952	350,739	156,560	52,949	159,881	33,149	36,316	22,505	812,099
	1951	469,625	192,274	70,378	169,900	36,790	43,561	21,322	1,003,850
	1950	556,571	232,465	84,018	169,869	37,606	40,695	21,083	1,142,307
% OF TOTAL	1955	48.02%	17.52%	3.76%	17.35%	4.89%	3.41%	5.05%	100.00%
	1954	48.38%	18.30%	4.27%	18.08%	3.91%	3.51%	3.55%	100.00%
	1953	49.55%	18.57%	4.87%	16.20%	3.96%	3.90%	2.95%	100.00%
	1952	43.19%	19.28%	6.52%	19.69%	4.08%	4.47%	2.77%	100.00%
	1951	46.80%	19.15%	7.01%	16.92%	3.66%	4.34%	2.12%	100.00%
	1950	48.72%	20.35%	7.36%	14.87%	3.29%	3.56%	1.85%	100.00%

New Car and Truck Registrations—by Years*

Year	New Passenger Cars	New Commercial Vehicles
1929	3,880,206	527,057
1930	2,625,979	410,699
1931	1,908,141	313,884
1932	1,096,399	180,413
1933	1,943,794	245,869
1934	1,888,557	402,886
1935	1,743,908	510,683
1936	3,404,497	611,644
1937	3,483,752	618,249
1938	1,891,021	365,349
1939	2,653,377	486,748
1940	3,415,905	559,150
1941	3,731,166	640,697
1942	304,691	77,422
1943	205,805	62,469
1944	65,730	121,269
1945	71,877	350,932
1946	1,815,196	625,249
1947	3,167,231	879,132
1948	3,490,952	1,035,174
1949	4,838,342	961,961
1950	6,326,439	1,142,307
1951	5,060,903	1,003,850
1952	4,158,394	812,099
1953	5,738,989	930,312
1954	5,535,464	829,101
1955	7,169,908	957,001

*Sources: 1929 through February 1942 and 1946 and later years compiled by R. L. Polk & Co. Passenger car data from March, 1942, through July, 1945, are from OPA and represent new car releases to civilian users. Commercial car data from April, 1942, through July, 1945, are from WPB and ODT and represent certificates of transfer issued to civilian users, excluding government exemption permits.

1955 New Truck Registrations—by Rank

Make	Units
Chevrolet	329,791
Ford	295,900
International	100,441
G.M.C.	84,877
Dodge	66,208
Willys Truck	16,811
White	14,372
Mack	10,932
Studebaker	10,817
Willys Jeep	10,441
Diamond T	3,697
Divco	3,298
Reo	3,121
Kenworth	1,182
Brockway	1,144
Peterbilt	424
F.W.D.	315
Federal	56
All Others (Domestic)	947
All Others (Foreign)	2,227
Total	957,001

1955 New Car Registrations—by Rank

Make	Units
Chevrolet	1,640,681
Ford	1,573,276
Buick	737,879
Plymouth	647,352
Oldsmobile	589,515
Pontiac	530,007
Mercury	371,837
Dodge	284,323
Chrysler	156,458
Cadillac	141,038
DeSoto	118,062
Studebaker	95,761
Nash	93,541
Packard	52,103
Hudson	43,212
Lincoln	35,017
Willys	6,267
Kaiser	959
Continental	606
Foreign Cars	51,658
All Other	356
Total	7,169,908

DISTRIBUTION OUTLETS

Automotive Wholesalers, Dealers and Repair Shops—By Years

Trade List Department, Chilton Company, as of January of Each Year

	Wholesalers	Passenger Car Dealers	Total Truck Dealers	Car and Truck Dealers	Independent Repair Shops	All Retail Outlets
1933	5,337	38,002	23,746	39,370	59,547	103,113
1934	5,430	34,069	.....	35,265	65,064	102,456
1935	5,747	35,977	.....	37,238	64,518	105,991
1936	5,905	39,769	23,045	41,201	60,574	105,579
1937	5,874	41,288	24,853	43,461	56,423	102,808
1938	5,934	43,747	27,248	46,224	51,709	101,053
1939	6,019	39,936	26,909	41,992	50,406	95,418
1940	6,176	39,258	24,575	41,870	49,091	93,764
1941	6,575	39,833	24,992	41,790	49,208	95,296
1942	6,631	38,748	32,291	40,537	57,552	93,022
1943	6,130	32,470	27,820	34,270	43,540	86,863
1944	6,101	31,200	.....	33,000	42,166	78,550
1945	6,217	30,110	26,370	31,930	41,198	78,498
1946	6,612	30,709	27,159	32,439	42,702	81,638
1947	7,328	34,424	29,397	36,354	49,485	91,229
1948	7,982	38,480	25,998†	40,410	55,694	104,504
1949	8,338	40,022	27,584	43,004	59,908	109,499
1950	8,567	43,079	28,307	45,918	63,714	115,026
1951	8,687	43,115	30,297	46,251	71,199	117,450
1952	8,703	43,257	30,009	46,271	70,324	116,595
1953	8,988	45,248	31,149	48,155	72,452	120,607
1954	9,230	44,403	31,055	47,463	74,570	122,038
1955	9,446	42,340	29,189	45,704	77,881	123,585
1956	9,502	40,786	30,079	44,386	81,773	126,159

† Reduction in truck dealers caused by discontinuance of Plymouth truck production.

Automotive Wholesale and Retail Outlets by States

With Number of Motor Vehicles per Outlet

Trade List Department, Chilton Company; as of January, 1956

STATE	Total Motor Vehicle Registrations	WHOLESALERS: Number of Wholesalers	WHOLESALERS: Motor Vehicles per Wholesaler	DEALERS: Passenger Car Dealers	DEALERS: Truck Dealers	DEALERS: Car and Truck Dealers	DEALERS: Motor Vehicles per Car and Truck Dealer	REPAIR SHOPS: Independent Repair Shops	REPAIR SHOPS: Motor Vehicles per Repair Shop	RETAIL OUTLETS: All Retail Outlets	RETAIL OUTLETS: Motor Vehicles per Outlet
Alabama	946,714	161	5,880	516	439	584	1,621	811	1,167	1,395	679
Arizona	395,760	86	4,602	187	164	214	1,849	677	584	891	444
Arkansas	573,356	153	3,747	490	430	551	1,040	698	821	1,249	459
California	6,107,897	908	6,727	2,004	1,446	2,219	2,753	8,249	740	10,468	583
Colorado	743,000	106	7,009	448	364	477	1,558	1,075	691	1,552	479
Connecticut	904,774	113	8,007	506	347	568	1,593	1,174	771	1,742	519
Delaware	141,121	21	6,720	95	69	103	1,370	280	504	383	368
Dist. of Columbia	198,271	26	7,626	73	53	80	2,478	240	826	320	620
Florida	1,604,242	224	7,162	641	456	692	2,318	2,123	756	2,815	570
Georgia	1,228,819	193	6,367	761	600	804	1,528	1,116	1,101	1,920	640
Idaho	343,500	75	4,580	316	305	352	976	510	674	862	398
Illinois	3,240,964	495	6,547	2,375	1,642	2,673	1,212	5,042	643	7,715	420
Indiana	1,767,000	264	6,693	1,252	934	1,361	1,298	2,298	769	3,659	483
Iowa	1,178,417	238	4,951	1,265	1,058	1,398	843	1,617	729	3,015	391
Kansas	1,046,853	170	6,158	955	809	1,054	993	1,115	939	2,169	483
Kentucky	1,013,700	175	5,793	722	601	787	1,288	953	1,064	1,740	582
Louisiana	947,793	133	7,126	528	401	566	1,675	608	1,559	1,174	807
Maine	328,168	58	5,658	335	270	361	909	583	563	944	348
Maryland	937,434	103	9,101	438	294	459	2,042	1,078	870	1,537	610
Massachusetts	1,537,589	220	6,989	1,075	664	1,115	1,379	1,871	1,821	2,986	515
Michigan	3,089,363	340	9,086	1,677	1,141	1,752	1,763	3,520	878	5,272	586
Minnesota	1,331,051	176	7,563	1,428	1,101	1,515	878	1,966	677	3,481	382
Mississippi	597,618	118	5,065	599	479	655	912	435	1,374	1,090	548
Missouri	1,546,200	273	5,664	1,094	839	1,189	1,300	1,734	892	2,923	529
Montana	329,959	62	5,322	383	369	436	757	454	727	890	371
Nebraska	650,224	133	4,889	689	581	757	859	890	731	1,647	395
Nevada	120,498	24	5,021	90	78	98	1,230	169	713	267	451
New Hampshire	207,000	32	6,469	236	163	253	818	317	653	570	363
New Jersey	2,014,311	247	8,155	1,041	746	1,145	1,759	3,749	537	4,894	411
New Mexico	324,600	79	4,109	222	191	238	1,364	499	650	737	440
New York	4,577,800	535	8,557	2,564	1,649	2,780	1,647	7,841	584	10,621	431
North Carolina	1,427,465	241	5,923	916	654	994	1,436	1,424	1,002	2,418	590
North Dakota	305,211	56	5,450	471	444	526	580	390	782	916	333
Ohio	3,459,655	463	7,472	2,051	1,374	2,187	1,582	3,823	905	6,010	576
Oklahoma	1,012,540	215	4,709	799	643	868	1,167	1,055	960	1,923	526
Oregon	797,270	188	4,241	505	392	538	1,482	1,260	633	1,798	443
Pennsylvania	3,692,000	575	6,421	2,812	1,747	3,049	1,211	6,970	530	10,019	368
Rhode Island	300,150	39	7,696	180	98	187	1,605	576	521	763	393
South Carolina	744,661	102	7,300	423	314	448	1,662	656	1,135	1,104	674
South Dakota	325,290	59	5,513	459	383	516	1,630	460	707	976	333
Tennessee	1,133,937	182	6,230	659	489	717	1,581	996	1,138	1,713	662
Texas	3,816,700	614	6,216	2,322	1,683	2,545	1,500	3,768	1,013	6,313	604
Utah	329,280	81	4,065	212	162	240	1,372	583	565	823	400
Vermont	135,412	24	5,642	171	120	183	740	249	544	432	313
Virginia	1,226,071	157	7,809	867	607	930	1,318	1,327	924	2,257	543
Washington	1,135,386	232	4,894	668	534	736	1,543	2,027	560	2,763	411
West Virginia	536,960	105	5,114	534	397	573	1,937	751	715	1,324	406
Wisconsin	1,364,519	191	7,144	1,519	1,163	1,685	810	1,509	904	3,194	427
Wyoming	168,100	37	4,543	213	162	228	737	257	654	485	346
Total	61,884,702	9,502	6,513	40,786	30,079	44,386	1,394	81,773	757	126,159	490

• DISTRIBUTION OUTLETS •

Census of Retail Automotive Establishments and Gasoline Filling Stations—1954-1948

As reported by the Bureau of the Census

AUTOMOTIVE RETAIL ESTABLISHMENTS

Zone	Geographical Regions	NUMBER OF OUTLETS: Establishments 1954	Establishments 1948	% Change	Per Cent of Total 1954	Per Cent of Total 1948	DOLLAR VOLUME: Sales Volume (Add 000) 1954	Sales Volume (Add 000) 1948	% Change	Per Cent of Total 1954	Per Cent of Total 1948
1	New England	5,012	4,902	+2.24	5.84	5.69	$1,751,942	$1,111,807	+57.58	5.88	5.53
2	Middle Atlantic	12,911	13,422	—3.81	15.03	15.58	5,133,672	3,387,091	+51.56	17.22	16.85
3	South Atlantic	11,472	10,136	+13.18	13.36	11.77	3,772,635	2,381,339	+58.42	12.66	11.85
4	East North Central	17,234	18,401	—6.34	20.07	21.37	6,753,618	4,584,335	+47.32	22.66	22.81
5	East South Central	5,666	5,068	+11.80	6.60	5.88	1,688,761	1,162,689	+45.25	5.66	5.78
6	West North Central	10,375	11,586	—10.45	12.08	13.45	2,943,691	2,255,933	+30.49	9.87	11.22
7	West South Central	10,456	10,240	+2.11	12.17	11.89	3,091,269	2,048,007	+50.94	10.37	10.19
8	Mountain	3,875	3,898	+0.59	4.51	4.53	1,220,614	807,862	+51.09	4.09	4.02
9	Pacific	8,878	8,471	+4.80	10.34	9.84	3,452,923	2,362,744	+46.18	11.59	11.75
	Total—United States	85,879	86,124	—0.38	100.00	100.00	$29,810,125	$29,101,807	+48.29	100.00	100.00

GASOLINE FILLING STATIONS

1	New England	10,314	11,565	—10.82	5.67	6.14	$572,240	$372,003	+53.83	5.31	5.74
2	Middle Atlantic	27,711	31,031	—10.70	15.25	16.49	1,599,754	998,469	+60.22	14.84	15.40
3	South Atlantic	26,167	25,970	+0.76	14.40	13.80	1,439,879	785,462	+83.32	13.36	12.11
4	East North Central	35,949	36,987	—2.89	19.78	19.65	2,371,602	1,479,603	+60.29	22.00	22.82
5	East South Central	10,804	10,753	+0.47	5.94	5.71	593,623	338,851	+75.19	5.51	5.23
6	West North Central	21,736	23,476	—7.41	11.96	12.47	1,133,890	802,844	+41.23	10.51	12.38
7	West South Central	20,041	19,826	+1.08	11.03	10.53	1,058,225	588,778	+79.73	9.82	9.08
8	Mountain	8,364	8,356	+0.10	4.60	4.45	521,316	310,870	+67.70	4.84	4.80
9	Pacific	20,648	20,257	+1.93	11.37	10.76	1,489,523	806,325	+84.73	13.81	12.44
	Total—United States	181,734	188,221	—3.45	100.00	100.00	$10,780,052	$6,483,205	+66.28	100.00	100.00

States comprising the various regions are: Zone 1: Conn., Mass., Me., N. H., R. I., Vt.—Zone 2: N. J., N. Y., Pa.—Zone 3: Del., D. of C., Fla., Ga., Md., N. C., S. C., Va., W. Va.—Zone 4: Ill., Ind., Mich., Ohio, Wisc.—Zone 5: Ala., Ky., Miss., Tenn.—Zone 6: Iowa, Kan., Minn., Mo., Neb., N. D., S. D.—Zone 7: Ark., La., Okla., Tex.—Zone 8: Ariz., Colo., Ida., Mont., Nev., N. M., Utah, Wyo.—Zone 9: Cal., Ore., Wash.

Census of Retail Automotive Outlets* and Gasoline Filling Stations, by States

As reported by the Bureau of the Census

(All dollar figures are in thousands)

State	AUTOMOTIVE RETAIL OUTLETS: 1954	1948	% Change	1954	1948	% Change	GASOLINE FILLING STATIONS: 1954	1948	% Change	1954	1948	% Change
Alabama	1,413	1,214	16.4	$433,338	$292,931	47.9	2,938	2,897	1.4	$145,484	$86,280	68.6
Arizona	534	467	14.3	168,416	100,322	67.9	1,315	1,126	16.8	89,485	40,671	120.0
Arkansas	1,184	1,177	0.6	280,849	214,869	30.7	2,102	2,401	—12.5	91,765	59,357	54.6
California	6,303	6,052	4.1	2,651,381	1,722,669	53.9	14,768	14,296	3.3	1,150,941	593,325	94.0
Colorado	1,029	1,042	1.3	336,216	217,772	54.4	2,026	2,123	—4.6	124,906	78,418	59.3
Connecticut	1,135	1,115	1.8	441,121	278,420	58.4	2,333	2,668	—12.6	142,945	94,588	51.1
Delaware	176	186	5.4	72,669	58,847	23.5	475	434	9.4	27,465	16,382	67.6
Dist. of Columbia	209	225	7.1	192,289	141,623	35.8	422	398	6.0	55,627	36,129	54.0
Florida	3,076	1,583	31.1	773,355	373,455	107.1	4,715	3,950	19.4	268,713	134,251	100.1
Georgia	1,927	1,760	9.5	574,136	380,511	50.9	4,113	4,148	—0.8	222,455	120,295	84.9
Idaho	462	517	—10.6	135,081	107,048	26.2	929	1,009	—7.9	51,563	36,068	43.0
Illinois	4,344	4,640	—6.4	1,797,611	1,254,310	43.3	8,919	9,164	—2.7	604,063	392,505	53.9
Indiana	2,533	2,719	—6.8	872,164	588,206	48.3	5,188	5,745	—9.7	320,660	208,141	54.1
Iowa	1,988	2,275	—12.6	546,601	425,004	28.6	4,492	4,557	—1.4	221,595	153,022	44.8
Kansas	1,844	2,108	—12.5	476,271	348,270	36.7	3,438	3,692	—6.9	173,915	121,126	43.6
Kentucky	1,509	1,297	16.3	428,346	281,408	52.2	2,641	2,646	—0.2	144,033	79,205	81.8
Louisiana	1,141	1,136	0.4	440,457	276,834	59.1	2,544	2,320	9.6	161,923	79,487	103.7
Maine	635	621	2.2	163,544	112,110	45.9	1,212	1,425	—15.0	60,655	41,294	46.9
Maryland	980	928	5.6	423,742	261,621	62.0	2,301	2,076	10.8	162,622	81,475	99.6
Massachusetts	2,147	2,110	1.7	828,437	506,820	63.4	4,467	4,886	—8.6	257,965	165,208	56.1
Michigan	3,510	3,824	—8.2	1,685,683	1,102,544	52.9	8,170	8,526	—4.2	569,253	347,888	63.6
Minnesota	1,816	2,002	—9.3	577,683	457,484	26.3	4,226	4,598	—8.1	220,088	173,090	27.1
Mississippi	962	1,013	—5.0	270,811	206,928	30.9	1,837	1,999	—8.1	103,504	60,635	70.7
Missouri	2,687	2,837	—5.3	794,129	572,897	38.6	5,534	6,157	—10.1	300,858	173,401	73.5
Montana	490	520	—5.8	152,998	107,379	42.5	934	968	—3.5	55,584	37,760	47.2
Nebraska	1,058	1,137	—7.0	287,753	228,034	26.2	2,148	2,298	—6.5	125,916	100,045	25.8
Nevada	156	155	0.6	57,907	36,104	60.4	349	348	0.3	33,458	14,230	135.1
New Hampshire	444	375	18.4	106,272	61,315	73.3	812	858	—5.4	40,177	22,629	77.5
New Jersey	2,370	2,295	3.3	975,369	590,839	65.1	5,403	6,378	—15.3	323,278	195,914	65.0
New Mexico	501	432	16.0	145,345	83,531	74.0	1,232	1,077	14.5	67,632	35,682	89.5
New York	5,448	5,821	—6.4	2,346,686	1,538,558	52.5	11,565	12,536	—7.8	710,018	441,979	60.6
North Carolina	2,195	1,907	15.1	609,254	393,912	54.7	5,176	6,164	—16.0	245,354	140,200	75.0
North Dakota	442	603	—26.6	126,691	114,973	10.2	858	938	—8.5	42,292	38,981	8.5
Ohio	4,610	4,878	—5.5	1,747,113	1,149,479	52.0	8,756	8,992	—2.6	616,977	378,914	62.8
Oklahoma	1,914	2,061	—7.1	451,867	336,370	34.3	3,400	3,813	—10.8	160,388	100,125	60.2
Oregon	1,100	1,029	6.9	355,201	283,021	25.5	2,525	2,411	4.7	143,574	90,341	58.9
Pennsylvania	5,093	5,306	—4.0	1,811,617	1,257,694	44.0	10,743	12,117	—11.3	566,458	360,576	57.1
Rhode Island	388	390	—0.5	139,371	98,561	41.4	956	1,065	—10.2	45,872	30,646	49.7
South Carolina	1,268	1,051	20.6	299,258	210,794	42.0	2,684	2,519	6.6	127,415	66,905	90.4
South Dakota	540	625	—13.6	134,563	109,271	23.1	1,040	1,236	—15.9	49,226	43,179	14.0
Tennessee	1,782	1,544	15.4	556,266	381,422	45.8	3,388	3,211	5.5	200,602	112,731	77.9
Texas	6,217	5,866	6.0	1,918,096	1,219,934	57.2	11,995	11,292	6.2	644,149	349,809	84.1
Utah	404	426	—5.2	139,465	93,184	49.7	1,003	1,070	—6.3	64,419	40,033	60.9
Vermont	263	291	—9.6	73,196	54,581	34.1	534	663	—19.5	24,626	17,638	39.6
Virginia	1,683	1,522	10.6	574,659	359,390	59.9	4,039	4,083	—1.1	232,122	125,686	84.7
Washington	1,475	1,390	6.1	447,341	357,054	25.3	3,355	3,550	—5.5	195,008	122,659	59.0
West Virginia	958	974	—1.7	253,273	201,186	25.9	2,242	2,198	2.0	98,106	64,139	53.0
Wisconsin	2,237	2,340	—4.4	651,047	489,796	32.9	4,916	4,560	7.8	260,649	152,155	71.3
Wyoming	299	339	—11.8	85,186	62,522	36.2	575	635	—9.5	34,269	28,008	22.3
Total	85,879	86,124	—0.3	$29,810,125	$20,101,807	48.3	181,734	188,221	—3.45	$10,780,052	$6,483,205	66.3

*—Retail Outlets are new and used car dealers, used vehicle dealers, tire, battery and accessory stores, motorcycle dealers and other automotive dealers. — = Decrease; all others show increase.

U. S. Motor Vehicle Registrations, 1900-1955

These data do not include publicly owned vehicles of which there were approximately 714,000 in 1954

Year	PASSENGER CARS			TRUCKS AND BUSES			TOTAL VEHICLES	
	Units	Per Cent of Total	Per Cent Increase	Units	Per Cent of Total	Per Cent Increase	Units	Per Cent Increase
1900	8,000	....	150	.....	....	....	8,000	150
1901	14,800	....	85	.....	....	....	14,800	85
1902	23,000	....	55	.....	....	....	23,000	55
1903	32,920	....	43	.....	....	....	32,920	43
1904	54,590	98.7	66	700	1.3	100	55,290	68
1905	77,400	98.2	42	1,400	1.8	100	78,800	43
1906	105,900	98.0	37	2,200	2.0	57	108,100	37
1907	140,300	98.0	33	2,900	2.0	32	143,200	32
1908	194,400	98.0	38	4,000	2.0	38	198,400	38
1909	305,950	98.1	57	6,050	1.9	51	312,000	57
1910	458,377	97.8	50	10,123	2.2	65	468,500	50
1911	618,727	96.8	35	20,773	3.2	105	639,500	36
1912	901,596	95.5	46	42,404	4.5	104	944,000	48
1913	1,190,393	94.6	32	67,667	5.4	60	1,258,060	33
1914	1,664,003	94.4	36	99,015	5.6	46	1,763,018	40
1915	2,332,426	93.6	42	158,506	6.4	60	2,490,932	41
1916	3,367,889	93.1	43	250,048	6.9	58	3,617,937	45
1917	4,727,468	92.4	42	391,057	7.6	56	5,118,525	41
1918	5,554,952	90.2	21	605,496	9.8	55	6,160,448	20
1919	6,679,133	88.2	21	897,755	11.8	48	7,576,888	23
1920	8,131,522	88.0	22	1,107,639	12.0	23	9,239,161	22
1921	9,212,158	87.8	14	1,281,508	12.2	16	10,493,666	11
1922	10,704,076	87.2	16	1,569,523	12.8	22	12,273,599	17
1923	13,253,019	87.8	24	1,849,086	12.2	18	15,102,105	23
1924	15,436,102	87.6	15	2,176,838	12.4	18	17,612,940	17
1925	17,439,701	87.5	13	2,501,023	12.5	15	19,940,724	13
1926	19,220,885	87.3	10	2,831,674	12.7	13	22,052,559	11
1927	20,142,120	87.2	5	2,997,439	12.8	6	23,139,559	5
1928	21,308,159	87.1	6	3,203,524	12.9	7	24,511,683	6
1929	23,060,421	87.1	8	3,442,087	12.9	7	26,502,508	8
1930	22,972,745	86.7	—0.4	3,559,254	13.3	3.4	26,531,999	0.1
1931	22,420,629	86.3	—2.4	3,573,267	13.7	0.4	25,993,896	—2.0
1932	20,994,092	86.2	—6.4	3,347,730	13.8	—6.3	24,341,822	—6.4
1933	20,557,493	86.2	—2.1	3,292,439	13.8	—1.7	23,849,932	—2.0
1934	21,535,199	86.6	4.7	3,346,268	13.4	1.6	24,881,467	4.3
1935	22,513,715	86.1	4.5	3,644,997	13.9	8.9	26,158,712	5.1
1936	24,044,432	85.6	6.8	4,047,277	14.4	11.0	28,091,709	7.4
1937	25,356,786	85.5	5.5	4,292,484	14.5	6.1	29,649,270	5.5
1938	25,264,589	85.5	—0.4	4,283,395	14.5	—0.2	29,547,984	—0.3
1939	26,147,798	85.3	3.5	4,496,770	14.7	5.0	30,644,568	3.7
1940	27,240,475	85.3	4.2	4,683,376	14.7	4.1	31,923,851	4.2
1941	29,240,417	85.6	7.3	4,911,990	14.4	4.9	34,152,407	7.0
1942	27,683,529	85.4	—5.3	4,741,298	14.6	—3.5	32,424,827	—5.1
1943	25,841,215	84.7	—6.7	4,657,882	15.3	—1.8	30,499,097	—6.0
1944	25,298,639	84.6	—2.1	4,611,966	15.4	—1.0	29,910,605	—1.9
1945	25,398,824	83.5	0.4	5,025,233	16.5	9.0	30,424,057	1.7
1946	27,834,543	83.6	9.6	5,858,813	17.4	16.6	33,693,356	10.7
1947	30,482,007	81.8	9.6	6,754,256	18.2	15.4	37,236,263	10.6
1948	33,011,780	81.5	8.3	7,490,343	18.5	11.0	40,502,123	8.9
1949	36,235,930	82.3	9.8	7,770,852	17.7	3.7	44,006,782	8.6
1950	39,952,969	82.8	10.2	8,318,721	17.2	7.0	48,271,690	9.7
1951	42,123,278	82.7	5.4	8,834,741	17.3	6.2	50,958,019	5.6
1952	43,323,355	82.6	2.8	9,131,021	17.4	3.4	52,454,376	2.9
1953	46,251,460	83.2	6.8	9,343,274	16.8	2.3	55,594,734	6.0
1954	48,174,447	83.0	4.2	9,875,683	17.0	5.7	58,050,130	4.4
1955	51,631,216	83.4	7.2	10,253,486	16.6	10.4	61,884,702	6.6

— Denotes decrease. Sources: Public Roads Administration through 1930; 1931 to 1955 Automotive Industries count.

• TOTAL REGISTRATIONS •

Total U. S. Motor Vehicle Registrations by Regions, 1952-1955

Zone	Region	1955 Units	1955 % of Total	1954 Units	1954 % of Total	1953 Units	1953 % of Total	1952 Units	1952 % of Total	% Increase 1955 over 1954	% Increase 1955 over 1950
1	New England	3,413,093	5.52	3,237,755	5.58	3,081,960	5.54	2,973,610	5.64	5.41	23.60
2	Middle Atlantic	10,284,111	16.62	9,862,596	16.99	9,431,901	16.97	9,010,823	17.18	4.27	22.60
3	South Atlantic	8,045,143	13.00	7,315,802	12.60	6,984,961	12.56	6,574,093	12.54	9.97	38.83
4	East North Central	12,921,501	20.88	12,219,365	21.05	11,732,579	21.11	11,085,740	21.13	5.75	25.21
5	East South Central	3,691,969	5.97	3,480,110	6.00	3,254,395	5.85	3,009,212	5.74	6.09	39.61
6	West North Central	6,383,246	10.31	6,062,206	10.44	5,915,758	10.64	5,698,656	10.86	5.30	17.60
7	West South Central	6,350,389	10.26	5,886,343	10.14	5,565,118	10.01	5,272,387	10.07	7.88	29.62
8	Mountain	2,754,697	4.45	2,543,047	4.38	2,425,613	4.36	2,271,656	4.33	8.32	35.53
9	Pacific	8,040,553	12.99	7,442,906	12.82	7,202,449	12.96	6,558,199	12.51	8.03	33.93
	Total—United States	61,884,702	100.00	58,050,130	100.00	55,594,734	100.00	52,454,376	100.00	6.60	28.20

States in the various regions are: Zone 1: Conn., Me., Mass., N. H., R. I., Vt.—Zone 2: N. J., N. Y., Pa.—Zone 3: Del., D. of C., Fla., Ga., Md., N. C., S. C., Va., W. Va.—Zone 4: Ill., Ind., Mich., Ohio, Wis.—Zone 5: Ala., Ky., Miss., Tenn.—Zone 6: Iowa, Kan., Minn., Mo., Neb., N. D., S. D.—Zone 7: Ark., La., Okla., Tex.—Zone 8: Ariz., Colo., Ida, Mont., Nev., N. M., Utah, Wyo.—Zone 9: Cal., Ore., Wash.

Total U. S. Motor Vehicle Registrations by States, 1955-1954

As of the End of the Registration Year

These data do not include publicly owned vehicles of which there were approximately 714,000 in 1954

State	Passenger Cars[1] 1955	Passenger Cars[1] 1954	Trucks 1955	Trucks 1954	Buses 1955	Buses 1954	Total Motor Vehicles 1955	Total Motor Vehicles 1954	Per Cent of Total 1955	Per Cent of Total 1954
Alabama	760,277	687,079	185,087	166,453	1,350	1,567	946,714	855,099	1.53	1.47
Arizona	310,000	288,565	85,000	82,871	760	751	395,760	372,187	.64	.64
Arkansas	393,117	365,200	177,627	171,393	2,612	784	573,356	537,377	.93	.93
California	5,360,717	4,935,457	747,180	672,949	[2]	[2]	6,107,897	5,608,406	9.88	9.66
Colorado	575,000	525,212	168,000	152,250	[2]	[2]	743,000	677,462	1.20	1.17
Connecticut	797,685	717,631	104,058	103,278	3,031	3,177	904,774	824,086	1.46	1.42
Delaware	111,910	104,746	29,211	25,962	[2]	[2]	141,121	130,708	.23	.23
Dist. of Columbia	176,739	169,800	19,387	18,005	2,145	1,980	198,271	189,785	.32	.33
Florida	1,366,679	1,173,173	231,807	213,147	5,756	5,500	1,604,242	1,391,820	2.59	2.40
Georgia	985,582	892,691	236,753	228,415	6,484	6,414	1,228,819	1,127,520	1.99	1.94
Idaho	250,000	224,605	93,000	84,627	500	464[1]	343,500	309,696	.55	.53
Illinois	2,851,852	2,688,944	378,240	389,606	10,872	[2]	3,240,964	3,078,550	5.24	5.30
Indiana	1,460,000	1,390,970	300,000	283,505	7,000	6,970	1,767,000	1,681,445	2.86	2.90
Iowa	966,649	922,031	211,768	205,075	[2]	[2]	1,178,417	1,127,106	1.90	1.94
Kansas	795,665	758,843	251,188	241,657	[2]	[2]	1,046,853	1,000,500	1.69	1.72
Kentucky	803,100	749,905	209,000	195,176	1,600	1,648	1,013,700	946,729	1.64	1.63
Louisiana	752,323	684,944	191,240	186,452	4,230	4,151	947,793	875,547	1.53	1.51
Maine	253,457	238,806	74,396	71,878	315	653	328,168	311,337	.53	.54
Maryland	804,620	731,291	127,947	142,786	4,867	4,610	937,434	878,687	1.51	1.51
Massachusetts	1,357,887	1,291,329	174,166	174,378	5,536	5,458	1,537,589	1,471,165	2.48	2.53
Michigan	2,716,717	2,468,135	372,646	362,218	[2]	[2]	3,089,363	2,830,353	4.99	4.88
Minnesota	1,086,993	1,050,647	229,691	221,333	4,367	4,289	1,331,051	1,276,269	2.15	2.20
Mississippi	418,162	380,977	173,043	186,723	6,413	6,150	597,618	573,850	.97	.99
Missouri	1,240,000	1,137,095	302,000	281,138	4,200	4,295	1,546,200	1,422,528	2.50	2.45
Montana	229,435	211,824	100,524	93,037	[2]	[2]	329,959	304,861	.53	.53
Nebraska	503,833	484,295	145,516	145,806	875	952	650,224	631,053	1.05	1.09
Nevada	94,010	86,760	26,488	25,209	[2]	[2]	120,498	111,969	.19	.19
New Hampshire	170,000	162,746	37,000	42,086	[2]	[2]	207,000	204,832	.33	.35
New Jersey	1,756,765	1,674,679	248,063	224,269	9,483	10,166	2,014,311	1,909,114	3.25	3.29
New Mexico	240,000	225,428	82,500	76,425	2,100[1]	2,039[1]	324,600	303,892	.52	.52
New York	3,900,000	3,707,966	660,000	645,841	17,800	17,607	4,577,800	4,371,414	7.40	7.53
North Carolina	1,159,715	1,027,623	266,270	247,403	1,579	1,735	1,427,564	1,276,761	2.31	2.20
North Dakota	209,070	201,590	96,082	92,482	59	68	305,211	294,140	.49	.51
Ohio	3,059,739	2,897,481	395,730	379,934	4,186	4,056	3,459,655	3,281,471	5.60	5.65
Oklahoma	760,812	709,137	250,344	240,112	1,384	1,456	1,012,540	950,705	1.64	1.64
Oregon	723,470	687,215	72,400	84,520	1,400	1,520	797,270	773,255	1.29	1.33
Pennsylvania	3,150,000	3,036,001	530,000	533,680	12,000	12,387	3,692,000	3,582,068	5.97	6.17
Rhode Island	261,500	255,823	38,000	38,439	650	680	300,150	294,942	.48	.51
South Carolina	614,424	546,620	123,679	129,326	6,558	5,987	744,661	681,933	1.20	1.17
South Dakota	240,000	228,808	85,000	81,519	290	283	325,290	310,610	.53	.54
Tennessee	916,367	893,527	214,806	210,905	2,764	[2]	1,133,937	1,104,432	1.83	1.90
Texas	3,040,000	2,797,555	771,200	720,603	5,500	4,556	3,816,700	3,522,714	6.18	6.07
Utah	268,015	240,400	60,653	57,380	612	434	329,280	298,214	.53	.51
Vermont	120,000	116,304	15,300	14,967	112	122	135,412	131,393	.22	.23
Virginia	1,014,854	936,919	208,344	198,046	2,373	2,427	1,226,071	1,137,392	1.98	1.96
Washington	928,024	874,581	205,007	184,771	2,355	1,893	1,135,386	1,061,245	1.83	1.83
West Virginia	413,000	386,763	123,000	113,463	960	970	536,960	501,196	.87	.86
Wisconsin	1,135,781	1,090,687	225,072	253,773	3,666	3,086	1,364,519	1,347,546	2.20	2.32
Wyoming	117,271	115,639	50,829	49,127	[3]	[3]	168,100	164,766	.27	.28
Total	51,631,216	48,174,447	10,104,742	9,744,398	148,744	131,285	61,884,702	58,050,130	100.00	100.00

[1]—Includes taxicabs. [2]—Included with trucks. [3]—Included with passenger cars.

Note: In the above tabulation we have endeavored to make as accurate a count as existing conditions permit. This census is compiled from material secured direct from the state motor vehicle commissioners. Wherever possible, duplications occasioned by transfers and non-resident registrations have been eliminated. Data are for the registration year, even though this necessitates partial estimates, in the case of those states whose registration year ends February or March of the following year.

Estimated Scrappage of Motor Vehicles

Year	Passenger Cars	Trucks	Total Motor Vehicles	Year	Passenger Cars	Trucks	Total Motor Vehicles	Year	Passenger Cars	Trucks	Total Motor Vehicles
1932	2,522,936	405,950	2,928,886	1940	2,323,228	372,544	2,695,772	1948	961,179	320,718	1,281,897
1933	2,380,393	301,160	2,681,553	1941	1,731,224	412,083	2,143,307	1949	1,614,192	658,821	2,273,013
1934	910,851	350,057	1,260,908	1942†	1,861,579	248,114	2,109,693	1950	2,609,399	727,211	3,336,610
1935	1,765,392	211,954	1,977,346	1943†	2,048,119	145,885	2,194,004	1951	2,890,594	487,830	3,378,424
1936	1,873,780	209,364	2,083,144	1944†	608,306	167,185	775,491	1952	2,958,317	515,312	3,473,629
1937	2,171,398	373,042	2,544,440	1945†	+62,308	+23,335	+90,643	1953	2,810,884	718,059	3,528,943
1938	1,983,218	374,438	2,357,656	1946†	+620,523	+208,331	+828,854	1954	3,612,477	296,612	3,909,089
1939	1,770,168	273,373	2,043,541	1947	519,767	+16,311	503,456	1955	3,713,139	579,198	4,292,337

†—The actual computations for the years 1942 through 1946 give unrealistic scrappage estimates for these years because of the cars and trucks being placed in storage during 1942 and then being returned to service at the end of the war.

+—Indicates the increase in number of registrations over the number of new vehicles sold.

FORMULA—Scrappage was estimated by adding new car and truck registrations to the total number of vehicles registered in a given year (1952 for example). This sum represents what would have been total registrations at the end of that year (1953) provided there was no scrappage during the year. From this total we subtracted the number of vehicles registered during the year (1953). The difference represents our estimate of the number of vehicles which were either scrapped or taken out of service during 1953.

Ranking of the States According to 1955 Total Registrations

Rank	State	Units	% of Total	Rank	State	Units	% of Total	Rank	State	Units	% of Total
1	California	5,608,406	9.88	18	Iowa	1,178,417	1.90	35	Arizona	395,760	.64
2	New York	4,577,800	7.40	19	Washington	1,135,386	1.83	36	Idaho	343,500	.55
3	Texas	3,816,700	6.18	20	Tennessee	1,133,937	1.83	37	Montana	329,959	.53
4	Pennsylvania	3,692,000	5.97	21	Kansas	1,046,853	1.69	38	Utah	329,280	.53
5	Ohio	3,459,655	5.60	22	Kentucky	1,013,700	1.64	39	Maine	328,168	.53
6	Illinois	3,240,964	5.24	23	Oklahoma	1,012,540	1.64	40	South Dakota	325,280	.53
7	Michigan	3,089,363	4.99	24	Louisiana	947,793	1.53	41	New Mexico	324,600	.52
8	New Jersey	2,014,311	3.25	25	Alabama	946,714	1.53	42	North Dakota	305,211	.49
9	Indiana	1,767,000	2.86	26	Maryland	937,434	1.51	43	Rhode Island	300,150	.48
10	Florida	1,604,242	2.59	27	Connecticut	904,774	1.46	44	New Hampshire	207,000	.33
11	Missouri	1,546,200	2.50	28	Oregon	797,270	1.29	45	District of Columbia	198,271	.32
12	Massachusetts	1,537,589	2.48	29	South Carolina	744,661	1.20	46	Wyoming	164,766	.27
13	North Carolina	1,427,564	2.31	30	Colorado	743,000	1.20	47	Delaware	141,121	.23
14	Wisconsin	1,364,519	2.20	31	Nebraska	650,224	1.05	48	Vermont	131,393	.22
15	Minnesota	1,331,051	2.15	32	Mississippi	597,618	.97	49	Nevada	120,498	.19
16	Georgia	1,228,819	1.99	33	Arkansas	573,356	.93				
17	Virginia	1,226,071	1.98	34	West Virginia	536,960	.87		Total	61,884,702	100.00

Taxicab, Motorcycle and Trailer Registrations, by States

State	Taxicabs§ 1955	1954	1953	Motorcycles 1955	1954	1953	1955 Trailers and Semi-Trailers Tourist▲	Commercial	Total
Alabama	2,331	2,572	2,766	6,753	6,437	6,840	....	....	16,381
Arizona	140	190	219	3,260	3,509	3,405	18,350	8,169	26,519
Arkansas	718	689	758	2,263	2,209	2,211	....	....	32,678
California	†	†	†	50,699	49,455	50,727	....	....	491,169
Colorado	*	*	*	2,700	4,415	4,157	....	....	20,000
Connecticut	688	638	1,208	3,937	3,638	3,577	21,285	10,213	31,498
Delaware	*	*	*	549	511	519	....	....	7,523
District of Columbia	11,348	10,437	11,382	502	425	516	....	....	1,616
Florida	23,166	17,628	15,087	17,967	16,506	16,482	49,387	93,818	143,205
Georgia	*	*	*	7,481	7,392	7,226	31,060	13,518	44,592
Idaho	475	464	84	2,000	1,981	2,137	4,500	35,500	40,000
Illinois	6,413	8,691	8,813	22,556	22,868	23,030	3,476	86,086	89,562
Indiana	*	*	*	17,000	17,629	18,404	....	....	135,000
Iowa	*	*	*	8,897	9,152	9,740	....	....	113,806
Kansas	*	*	*	8,213	8,389	8,266	6,321	12,985	19,306
Kentucky	2,022	2,091	2,195	5,100	5,487	5,737	....	....	....
Louisiana	3,080	3,122	3,411	5,912	5,372	5,041	3,000	49,576	52,576
Maine	1,089	1,051	1,075	1,448	1,493	1,840	....	....	27,709
Maryland	2,641	2,538	2,604	4,722	4,675	5,366	....	....	24,222
Massachusetts	*	*	*	4,643	4,457	4,282	....	....	80,181
Michigan	†	†	†	18,896	18,672	19,562	19,677	278,983	298,660
Minnesota	*	*	*	9,467	9,576	9,945	23,272	36,872	42,855
Mississippi	1,004	919	1,010	2,225	2,452	2,615	29,983	8,659	38,642
Missouri	*	*	*	6,800	6,965	6,736	....	....	86,000
Montana	*	*	*	1,216	1,154	1,070	12,786	10,802	23,588
Nebraska	471	456	459	4,217	4,012	3,910	50,169	11,933	62,102
Nevada	*	*	*	1,208	1,310	1,124	....	....	9,327
New Hampshire	*	*	*	1,500	1,545	1,645	....	....	14,000
New Jersey	*	*	*	9,553	8,672	9,013	....	....	41,401
New Mexico	850	910	1,158	3,100	3,435	3,147	3,800	8,000	11,800
New York	24,500	24,141	23,844	19,100	18,651	18,278	....	....	134,800
North Carolina	3,482	3,902	4,250	7,617	7,730	8,342	67,569	20,667	88,236
North Dakota	*	*	*	889	902	896	3,392	551	3,943
Ohio	*	*	*	25,945	25,312	25,701	13,919	205,347	219,266
Oklahoma	1,735	1,725	2,196	9,120	8,303	7,540	3,520	14,296	17,816
Oregon	*	*	*	5,700	5,507	5,440	....	....	24,967
Pennsylvania	4,900	4,500	‡	23,289	24,131	23,849	4,031	108,798	112,829
Rhode Island	320	319	1,158	1,483	1,603	1,653	....	....	12,304
South Carolina	2,000	2,107	2,531	4,888	4,990	5,141	2,646	8,440	11,086
South Dakota	*	*	*	1,540	1,555	1,548	3,458	34,580	38,308
Tennessee	....	4,958	5,500	5,872	5,765	6,236	....	....	8,327
Texas	*	*	*	30,000	27,871	28,318	20,000	185,000	205,000
Utah	*	*	*.	1,354	1,533	1,328	2,852	3,177	6,029
Vermont	*	*	*	812	768	754	....	....	8,236
Virginia	4,215	2,427	4,987	9,490	9,639	9,838	33,496	16,926	50,422
Washington	1,038	1,402	1,599	4,994	6,759	5,541	56,009	20,716	76,725
West Virginia	918	978	957	2,200	3,014	3,058	9,506	2,950	12,450
Wisconsin	*	*	*	9,631	8,910	9,147	7,523	15,496	23,019
Wyoming	*	*	*	757	849	896	4,054	12,119	16,173
Total	99,544	98,855	99,251	399,195	397,585	401,774	509,035	1,314,447	3,095,844

*—Included with passenger cars. †—Included with trucks. ‡—Included with buses. ▲—Includes light 2-wheel trailers. §—Taxicab registrations which were included in Passenger Cars in the table of U. S. Motor Vehicle Registrations by States.

• TOTAL REGISTRATIONS •

World Registrations by Continental Divisions

1954 Revised data. Latest available at time of going to press

Courtesy of The American Automobile (Overseas Edition) and El Automovil Americano

THE AMERICAS

Countries	Total Cars, Trucks, Buses	Cars	Trucks	Buses	Motor-cycles
Alaska	73,056	56,360	16,696	†	358
Antigua	701	584	97	20	105
Argentina	477,593	314,185	148,505	14,303	26,659
Bahamas	4,064	3,043	1,000	21	225
Barbados	6,602	4,800	1,639	163	436
Bermuda	3,668	2,978	634	56	3,360
Bolivia	21,253	5,871	14,617	765	536
Brazil	734,508	374,498	333,793	26,217	41,955
British Guiana	6,838	5,294	1,456	88	860
British Honduras	622	349	270	3	120
Canada	3,564,514	2,682,639	869,183	12,692	37,661
Chile	89,368	45,852	38,565	4,951	....
Colombia	126,393	67,275	47,138	11,980	....
Costa Rica	12,965	7,775	4,365	825	925
Cuba	151,815	106,652	40,231	4,932	10,608
Dominica	294	138	160	†	76
Dominican Republic	11,349	5,708	5,170	471	....
Dutch Guiana	2,018	1,438	485	95	422
Ecuador	20,448	5,967	12,153	2,328	200
Falkland Islands	192	111	81	....	76
French Guiana	1,077	740	320	17	90
Grand Cayman Is.	132	108	24	....	7
Greenland	1,107	912	194	1	....
Grenada	1,115	829	162	124	149
Guadeloupe	7,550	4,300	2,200	1,050	750
Guatemala	16,687	8,568	6,574	1,545	3,934
Haiti	8,215	4,437	3,545	233	387
Honduras	6,157	2,333	3,747	77	203
Jamaica	18,842	13,524	4,694	624	1,125
Martinique	9,525	5,200	3,525	800	350
Mexico	472,940	262,455	189,965	20,520	8,236
Montserrat	150	119	21	10	12
Netherlands W.I.	9,337	7,035	2,257	45	479
Nicaragua	5,971	3,026	2,660	285	328
Panama	15,310	11,291	4,019	†	239
Canal Zone	13,994	13,685	179	130	385
Paraguay	5,411	3,166	1,939	306	349
Peru	83,308	44,398	35,355	3,555	800
Puerto Rico	105,413	....	....	....	....
Salvador	15,253	10,551	4,702	†	591
St. Lucia	495	345	91	59	36
St. Kitts-Nevis	634	423	134	77	133
St. Vincent	320	250	70	†	....
Trinidad	26,703	19,884	6,479	340	988
United States	58,050,130	48,174,447	9,744,398	131,285	397,585
Uruguay	96,036	49,940	44,116	1,980	....
Venezuela	204,064	119,825	80,314	3,925	7,809
Virgin Islands	1,910	1,474	429	7	19
Total—1954	64,486,051	52,454,782	11,778,351	247,505	549,286
Total—1954 Excluding U. S. A.	6,435,921	4,280,335	2,033,953	116,220	151,701

†—Included with trucks.

AFRICA

Countries	Total Cars, Trucks, Buses	Cars	Trucks	Buses	Motor-cycles
Algeria	134,600	86,600	48,000	†	22,000
Angola	14,001	9,110	4,891	†	2,640
Belgian Congo	47,189	24,015	22,777	397	2,608
British East Africa	104,336	63,764	38,052	2,520	1,450
British Somaliland	900	100	800	†	....
British West Africa	66,191	23,676	42,515	†	....
Canary Islands	9,111	5,077	3,493	541	300
Cape Verde Islands	148	98	50	†	3?
Cyrenaica	425	....	....	....	....
Egypt	90,765	69,858	16,448	4,459	10,740
Eritrea	3,482	1,818	1,580	84	322
Ethiopia	12,032	6,760	5,134	138	886
French Cameroons	13,454	3,870	9,584	....	....
French Equa. Africa	13,162	4,222	8,867	73	910
French Morocco	137,913	92,958	42,712	2,243	13,144
French Somaliland	833	624	209	....	60
French West Africa	46,697	18,109	27,313	1,275	2,450
Italian Somaliland	3,940	988	2,917	35	310
Liberia	2,777	1,418	1,349	10	15
Libya	5,039	4,359	680	†	959
Madagascar	26,794	11,858	14,690	246	1,298
Mauritius	7,857	5,775	1,808	274	430
Mozambique	19,817	14,108	5,709	†	1,551
Nyasaland	5,233	2,915	2,241	77	632
Reunion Island	7,000	5,600	....	....	....
Rhodesia	91,644	61,216	29,818	610	4,800
St. Thomas Principe	134	81	53	†	21
Seychellas Island	250	196	54	†	25
South West Africa	15,000	8,000	7,000	†	400
Sudan	13,924	12,792	882	250	350
Tangier	6,590	6,000	500	90	450
Togoland	1,494	326	1,168	....	....
Tunisia	46,843	32,213	13,932	698	7,325
Union of South Africa	726,435	571,920	149,138	5,377	29,545
Total	1,676,010	1,150,424	504,364	19,397	105,651

†—Included with trucks.

EUROPE

Countries	Total Cars, Trucks, Buses	Cars	Trucks	Buses	Motor-cycles
Albania	2,000	600	1,400	†	....
Austria	124,064	71,825	48,548	3,691	202,408
Azores	2,506	1,956	550	†	309
Belgium	578,000	416,000	158,700	3,300	204,328
Bulgaria	14,500	4,500	9,000	1,000	....
Czechoslovakia	168,300	105,000	61,500	1,800	150,000
Denmark	293,736	192,739	97,500	3,497	160,000
Faroe Islands	462	157	293	12	109
Finland	131,101	71,798	54,535	4,768	49,200
France	3,310,000	2,090,000	1,190,000	30,000	1,700,000
Germany—East	65,000	..	65,000	....	....
Germany—West	2,104,532	1,508,385	571,282	24,865	2,341,795
Gibraltar	3,130	2,595	460	75	172
Great Britain	4,633,879	3,502,504	1,056,851	74,524	850,273
Greece	45,737	16,308	24,086	5,343	7,667
Holland	351,906	235,623	109,883	6,400	125,400
Hungary	16,000	5,500	9,000	1,500	5,200
Iceland	14,978	6,773	7,851	354	350
Ireland	162,064	122,803	38,016	1,245	15,001
Italy	1,078,000	745,000	315,000	18,000	2,100,000
Luxembourg	25,069	18,317	6,488	264	7,795
Madeira Island	2,616	1,952	664	†	120
Malta	10,904	7,284	3,620	†	1,302
Monaco	1,900	....	....	....	....
Northern Ireland	100,760	74,533	24,671	1,556	17,939
Norway	189,100	106,400	78,300	4,400	47,000
Poland	76,000	29,000	46,000	1,000	28,000
Portugal	124,373	84,578	39,795	†	11,697
Rumania	36,000	21,000	13,000	2,000	5,300
Spain	202,848	99,758	94,194	8,896	31,177
Sweden	663,700	545,000	110,300	8,400	580,000
Switzerland	325,302	279,517	43,333	2,452	193,805
U.S.S.R.	2,600,000	225,000	2,350,000	25,000	560,000
Yugoslavia	28,315	8,879	18,100	1,336	11,500
Total	17,486,782	10,601,284	6,647,920	235,678	9,407,847

†—Included with trucks.

ASIA

Countries	Total Cars, Trucks, Buses	Cars	Trucks	Buses	Motor-cycles
Afghanistan	4,881	352	4,426	103	5
Arabia	21,771	2,133	18,638	†	100
Bahrein Islands	1,468	749	679	40	....
British North Borneo	800	....	....	....	....
Burma	24,987	10,620	9,000	5,367	971
Ceylon	74,784	54,107	16,217	4,460	10,370
China	56,000	16,000	40,000	†	....
Cyprus	12,869	8,006	4,863	†	3,994
Formosa (Taiwan)	20,600	5,600	12,900	2,100	1,600
French Indo-China	46,162	32,482	13,680	†	....
Hongkong	15,476	15,127	2,808	535	1,199
India	290,064	159,788	94,102	36,174	27,500
Indonesia, Rep. of	130,300	62,500	51,528	16,272	63,397
Iran	53,776	29,148	18,847	5,781	3,174
Iraq	23,921	13,832	9,777	312	500
Israel	35,440	16,250	17,350	1,840	10,650
Japan	748,047	134,816	581,826	31,405	485,807
Jordan	6,905	3,209	3,049	647	140
Korea, Rep. of	14,500	1,500	13,000	†	....
Lebanon	24,331	19,257	4,181	893	950
Macao	358	300	58	†	....
Malaya, Fed. of	118,544	88,241	27,224	3,079	26,422
Pakistan	40,780	24,967	10,671	5,142	5,923
Philippine Republic	114,762	54,244	52,334	8,184	2,496
Sarawak	1,694	874	475	345	1,043
Singapore	44,604	34,151	9,383	1,070	6,970
Syria	19,232	9,891	7,769	1,572	1,279
Thailand	32,791	17,192	14,776	823	1,500
Turkey	67,328	32,915	29,185	5,228	9,536
Total	2,050,169	849,261	1,068,746	131,362	666,066

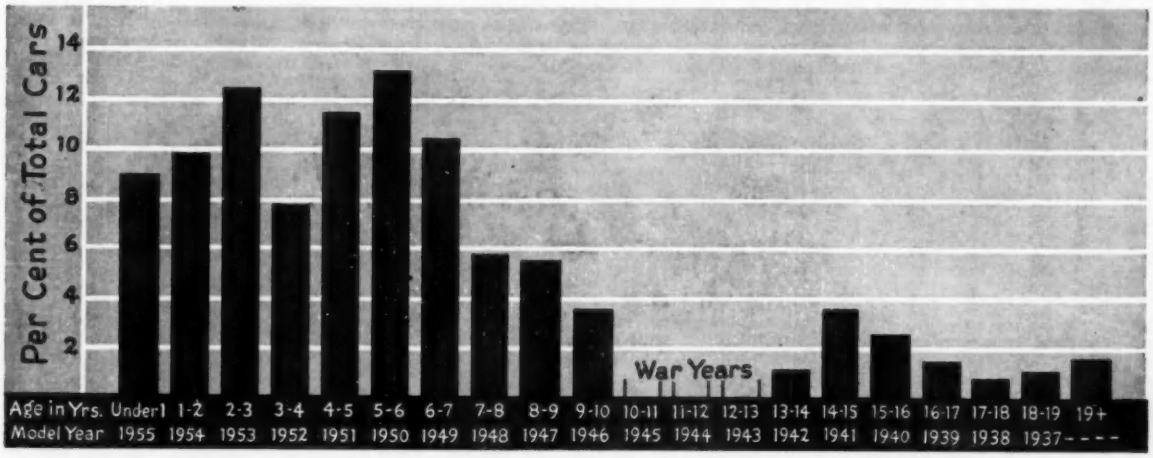
†—Included with trucks.

OCEANIA

Countries	Total Cars, Trucks, Buses	Cars	Trucks	Buses	Motor-cycles
Australia	1,988,469	1,346,573	633,655	8,241	132,954
Cook Islands	129	42	87	....	83
Fiji Islands	4,580	2,595	1,719	266	164
Guam	9,459	8,154	1,270	35	172
Hawaii	170,111	142,895	26,532	684	2,342
New Caledonia	4,255	2,580	1,675	....	290
New Guinea-Papua	3,781	1,815	1,947	19	466
New Zealand	481,397	353,384	125,314	2,699	24,723
Ryukyu Islands	2,650	700	1,670	280	588
Samoa	235	135	90	10	....
Society Islands	1,800	....	....	....	....
Timor Island	302	114	188	†	80
Trust Territory	191	110	80	1	....
Other Oceania	2,500	....	....	....	....
Total	2,669,859	1,859,097	794,227	12,235	161,862

†—Included with trucks.

5,741,000 PRE-WAR CARS STILL IN USE JULY 1, 1955



Number and Per Cent of Cars in Use, by Age Groups*

Age in Years	1955 Units	1955 % of Total Simple	1955 % of Total Cumul.	1954 Units	1954 % of Total Simple	1954 % of Total Cumul.	1953 Units	1953 % of Total Simple	1953 % of Total Cumul.	1952 Units	1952 % of Total Simple	1952 % of Total Cumul.
Under 1	4,135,548	8.78	8.78	2,620,354	5.91	5.91	2,900,616	6.89	6.89	1,831,074	4.62	4.62
1-2	4,589,042	9.72	18.50	5,717,841	12.91	18.82	3,720,053	8.84	15.73	5,387,369	13.58	18.20
2-3	5,723,459	12.15	30.65	3,698,425	8.35	27.17	5,461,553	12.97	28.70	6,202,028	15.63	33.83
3-4	3,674,973	7.80	38.45	5,443,347	12.29	39.46	6,219,450	14.77	43.47	4,968,539	12.52	46.35
4-5	5,386,532	11.43	49.88	6,179,050	13.95	53.41	4,965,804	11.80	55.27	2,943,223	7.42	53.77
5-6	6,102,453	12.95	62.83	4,898,498	11.06	64.47	2,931,654	6.96	62.23	2,952,518	7.44	61.21
6-7	4,772,516	10.13	72.96	2,884,520	6.51	70.98	2,913,754	6.92	69.15	1,942,396	4.90	66.11
7-8	2,765,944	5.87	78.83	2,821,467	6.37	77.35	1,903,101	4.52	73.67	.....	....	....
8-9	2,607,579	5.53	84.36	1,822,273	4.11	81.46	.....	....	....	.....	....	....
9-10	1,623,817	3.45	87.81	.....	....	....	.....	....	....	.....	....	....
10-11	.....	....	....	.....	....	....	.....	....	....	891,522	2.25	68.36
11-12	.....	....	....	.....	....	....	798,847	1.90	75.57	3,456,034	8.71	77.07
12-13	.....	....	....	640,824	1.45	82.91	3,095,153	7.35	82.92	2,495,524	6.29	83.36
13-14	463,793	.98	88.79	2,461,832	5.56	88.47	2,189,599	5.20	88.12	1,687,147	4.25	87.61
14-15	1,781,923	3.78	92.57	1,691,402	3.82	92.29	1,396,271	3.32	91.44	972,974	2.45	90.06
15-16	1,204,688	2.56	95.13	1,015,210	2.29	94.58	752,028	1.79	93.23	1,540,530	3.88	93.94
16-17	692,726	1.47	96.60	516,939	1.17	95.75	1,130,339	2.69	95.92	995,778	2.51	96.45
17-18	343,653	.73	97.33	746,447	1.68	97.43	698,101	1.66	97.58	430,499	1.09	97.54
18-19	481,076	1.02	98.35	444,275	1.00	98.43	294,296	.70	98.28	207,226	.52	98.06
19 and older	773,168	1.65	....	698,642	1.57	....	724,766	1.72	....	766,774	1.94	....
Total	**47,122,890**	**100.00**	**100.00**	**44,301,346**	**100.00**	**100.00**	**42,095,385**	**100.00**	**100.00**	**39,671,155**	**100.00**	**100.00**
Age not known	255,080	....	....	85,767	....	....	106,964	....	....	98,586	....	....
Total in use	**47,377,970**	....	....	**44,387,113**	....	....	**42,202,349**	....	....	**39,769,741**	....	....
Average age of known models	**5.85 yrs.**			**6.17 yrs.**			**6.51 yrs.**			**6.75 yrs.**		

*—Based on data from the Reuben H. Donnelly Corp. as of July 1 of each year.

Number and Per Cent of Trucks in Use, by Age Groups*

Age in Years	1955 Units	1955 % of Total Simple	1955 % of Total Cumul.	1954 Units	1954 % of Total Simple	1954 % of Total Cumul.	1953 Units	1953 % of Total Simple	1953 % of Total Cumul.	1952 Units	1952 % of Total Simple	1952 % of Total Cumul.
Under 1	501,841	5.51	5.51	408,880	4.67	4.67	440,866	5.11	5.11	366,700	4.39	4.39
1-2	689,919	7.57	13.08	842,041	9.61	14.28	791,329	9.17	14.28	995,740	11.94	16.30
2-3	846,981	9.30	22.38	786,008	8.97	23.25	986,754	11.44	25.72	1,103,081	13.22	29.55
3-4	776,276	8.52	30.90	966,514	11.03	34.28	1,078,431	12.50	38.22	935,084	11.21	40.76
4-5	953,787	10.47	41.37	1,055,119	12.04	46.32	906,053	10.50	48.72	953,949	11.43	52.19
5-6	1,036,818	11.38	52.75	880,347	10.04	56.36	918,715	10.65	59.37	762,089	9.13	61.32
6-7	862,071	9.46	62.21	866,072	9.88	66.24	722,543	8.38	67.75	691,537	8.29	69.61
7-8	831,940	9.13	71.34	664,221	7.58	73.82	651,553	7.55	75.30	148,180	1.78	71.39
8-9	624,674	6.86	78.20	594,195	6.78	80.60	133,499	1.55	76.85	64,312	.77	72.16
9-10	551,858	6.06	84.26	114,918	1.31	81.91	56,643	.66	77.51	23,037	.28	72.44
10-11	107,019	1.17	85.43	46,618	.53	82.44	21,109	.24	77.75	222,124	2.66	75.10
11-12	42,815	.47	85.90	17,074	.19	82.63	192,213	2.23	79.98	475,918	5.70	80.80
12-13	14,821	.16	86.06	168,562	1.92	84.55	415,142	4.81	84.79	335,983	4.02	84.82
13-14	148,315	1.63	87.69	349,884	3.99	88.54	288,875	3.25	88.14	245,627	2.94	87.77
14-15	304,021	3.34	91.03	238,384	2.72	91.26	208,594	2.42	90.56	167,136	2.00	89.77
15-16	202,159	2.22	93.25	168,497	1.92	93.18	138,793	1.61	92.17	249,710	2.99	92.76
16-17	141,254	1.55	94.80	108,335	1.24	94.42	203,061	2.35	94.52	199,759	2.39	95.19
17-18	88,925	.97	95.77	154,414	1.76	96.18	158,761	1.84	96.36	111,671	1.34	96.40
18-19	125,032	1.37	97.14	116,249	1.33	97.51	88,127	1.02	97.38	70,835	.85	97.84
19 and older	260,754	2.86	....	218,076	2.49	..	225,362	2.72	....	221,363	2.66	....
Total	**9,111,280**	**100.00**	**100.00**	**8,764,408**	**100.00**	**100.00**	**8,626,423**	**100.00**	**100.00**	**8,343,835**	**100.00**	**100.00**
Age not known	51,164	....	....	36,000	....	....	66,151	....	....	76,020	....	....
Total in use	**9,162,444**	....	....	**8,800,408**	....	....	**8,692,574**	....	**100.00**	**8,419,855**	....	....
Average age of known models	**6.71 yrs.**			**6.58 yrs.**			**6.59 yrs.**			**6.60 yrs.**		

*—Based on data from The Rueben H. Donnelly Corp. as of July 1 of each year.

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
BUICK	'55	5019	1942	2036	46216	3061	5772	1177	1722	9856	6617	1628	29837	12782	5978	5050	4906	4424	1781	4196	11570	35691	7863	2722	9382	1218
	'54	4913	1875	2144	36041	3519	6493	1164	1842	10450	6437	1689	34170	14176	6783	5816	4679	5061	1518	6452	11429	32912	7857	2717	8031	1524
	'53	6403	2502	2816	36025	4043	6674	1385	1803	12283	8231	1946	36453	14327	6941	6331	5533	6170	1824	5438	12707	31832	9661	3263	9514	1724
	'52	3463	1677	1817	24905	3110	4061	864	1099	7571	4963	1499	21194	8964	4363	4141	3399	3745	1222	3261	7474	18950	5729	2128	6067	1263
	'51	4618	2206	2151	34956	4408	5781	1098	1547	9388	6367	1796	27877	11709	6246	5309	4678	4617	1577	3616	10247	29123	7591	2671	7632	1596
	'50	3427	3779	3832	61230	8082	9671	1670	2717	16211	10296	2679	42841	18476	10766	8590	7740	8222	2754	4636	16193	28829	13125	4392	13317	2540
	'49	2954	1643	1302	30806	3375	5329	777	1612	7317	3562	1303	20661	8808	4816	3741	3767	3396	1465	3156	9670	12385	5320	1714	6329	1049
	'48	1876	1116	797	21675	2177	3390	529	906	4424	2337	794	11611	5643	2927	2190	2571	1782	1049	1911	6170	9101	3549	961	4133	652
	'47	2173	1270	898	22729	2364	3929	584	843	4894	2514	853	12158	6379	3009	2445	2905	1940	1221	1740	7109	8019	3588	1197	4490	650
	'46	1240	741	493	12794	1246	2005	335	452	2661	1246	469	5804	3034	1667	1228	1617	1093	672	740	3723	3774	1898	575	2363	370
	'45-'42	390	289	114	5554	410	536	141	62	669	379	205	1168	681	436	367	495	324	164	138	895	661	593	221	751	131
	'41	1643	1092	594	24629	1892	3075	508	376	3146	1697	732	5186	3065	1893	1715	2065	1249	800	849	4834	3296	2538	880	3513	490
	'40	1072	669	429	17318	1134	2623	388	313	2340	1060	472	3836	2134	1456	1085	1348	746	868	880	4311	2469	1927	551	2451	371
	'39	584	329	212	8152	564	1464	206	158	1021	517	191	1808	915	802	549	642	361	433	515	2018	1041	1042	322	1269	197
	'38	219	218	105	6031	380	892	122	109	625	275	134	1178	575	485	322	322	173	286	346	1146	597	645	113	709	113
	'37	213	233	105	7296	510	1047	100	85	579	234	165	1116	743	472	350	403	147	285	311	1185	822	696	113	737	131
	Before '37	134	179	68	6770	381	776	83	42	402	204	93	791	540	447	313	242	91	264	319	877	498	602	95	496	99
	Unid.*	71	8	13	114	20	19	777	821	346	402	19	738	106	42	48	82	60	9	11126	41	417	27	48	7	
	Total	45612	21767	19724	403243	40876	63537	11908	16509	94183	57338	16857	258647	113057	59530	49390	47394	43561	18192	49630	111599	208117	74039	24683	81371	14118
CADILLAC	'55	771	458	401	11093	874	1461	251	490	3219	1148	291	6738	2351	1051	1001	628	904	323	702	2179	8347	1438	509	1793	360
	'54	758	527	411	12466	819	1487	250	516	3739	1131	348	7090	2252	979	914	617	989	256	1093	2153	5626	1251	461	1675	316
	'53	896	669	467	14481	1024	1617	354	581	4209	1393	405	7940	2342	1057	966	763	1095	276	808	2542	5273	1402	533	1731	371
	'52	789	645	350	13696	954	1405	254	445	3453	1154	350	5977	1900	824	749	672	899	247	635	1980	3758	1149	424	1348	305
	'51	983	723	398	17067	1138	1843	294	553	4020	1477	425	6591	2153	1006	791	806	1096	315	652	2639	3609	1353	445	1661	339
	'50	907	707	361	19994	1186	1763	256	544	3823	1222	378	5923	1846	940	791	767	1049	340	665	2717	2731	1239	443	1494	298
	'49	861	604	326	15577	1095	1853	241	486	3829	1204	332	4985	1724	820	695	764	972	341	538	2592	2399	1136	355	1470	264
	'48	426	336	125	8428	522	1192	134	303	2043	662	150	3035	1068	393	298	417	476	195	444	1528	1416	580	188	793	110
	'47	486	396	164	8429	590	1326	128	326	2215	726	128	3036	1180	412	332	527	451	254	401	1900	1645	642	171	804	95
	'46	214	174	57	4058	257	641	69	141	1049	330	45	1192	516	176	141	258	207	126	186	841	603	286	82	349	47
	'45-'42	121	80	35	1984	136	252	33	43	356	135	30	386	143	76	57	100	101	44	28	343	194	144	46	167	18
	'41	403	381	103	9160	497	1124	94	159	1418	503	88	1303	593	279	249	394	298	227	274	1526	749	482	137	745	76
	'40	131	129	30	3344	172	484	61	82	527	165	31	507	231	89	67	157	85	122	118	663	328	228	45	276	34
	'39	84	105	22	2409	122	330	50	50	296	110	30	325	129	83	62	92	49	72	80	442	207	144	31	162	33
	'38	27	37	13	1280	49	162	10	20	138	40	10	131	59	36	37	36	27	44	28	188	96	63	17	78	11
	'37	34	68	16	1704	95	238	28	19	127	49	15	141	85	47	32	56	18	32	39	270	85	80	13	104	14
	Before '37	18	35	9	1422	56	134	14	6	97	39	14	111	43	45	18	21	16	21	30	133	57	56	12	65	15
	Unid.*	11	8	5	49	3	12	158	207	141	96	3	151	16	8	11	10	16	3	2295	15	63	5	11	1	1
	Total	7921	6076	3293	146641	9589	17334	2679	4951	34699	11584	3073	55562	18631	8323	7211	7065	8748	3238	8998	24651	37186	11678	3923	14716	2705
CHEVROLET	'55	17852	5148	7541	80000	9001	11666	2700	4377	32212	22389	3505	65899	30403	18816	15127	13889	18504	5934	10557	27009	74599	19681	9686	28745	4128
	'54	20618	5304	9395	72905	10592	14630	3640	5516	30745	25082	3566	75481	30771	22258	18054	15233	24197	4991	19604	29447	86934	23447	11741	28690	4489
	'53	21589	6757	11021	95327	12146	17307	4738	5477	31477	27401	5026	82665	40648	24775	18882	18565	23662	6360	18604	33481	87428	28955	12214	32966	5457
	'52	13436	4656	6969	62876	7906	10624	2891	3690	17977	16464	3425	46234	24358	14850	12648	12360	13982	4133	11046	20611	45132	17443	8252	21587	3709
	'51	20219	6952	10326	96653	12349	16694	3555	4355	25383	27074	4958	86944	36611	23661	19496	19397	18727	5988	12714	31486	60745	26037	11060	33380	5428
	'50	24482	7458	11776	116415	15138	18156	3533	4250	28939	27703	5688	98938	41766	26457	22277	22387	21926	6354	15078	32529	62623	28238	12119	38375	5919
	'49	19289	6045	9106	86600	11629	13256	2525	2687	20344	19990	4803	50305	31271	21634	17510	19150	16079	5123	9777	24791	41041	21729	9347	29048	4342
	'48	14850	3651	6369	55219	8563	8871	1853	1383	12254	14062	2920	32250	21238	15530	12709	13905	9859	3771	6578	16551	25629	15952	7110	21720	2917
	'47	13433	3602	5631	49881	8400	7839	1331	1148	11679	12851	2867	27835	18923	14625	12253	13358	8852	3327	6131	14651	21985	14879	6498	19438	2666
	'46	7820	2069	3452	31330	4672	4636	786	533	6395	7505	1685	14774	10367	7766	6705	7859	4795	2125	2305	8300	11346	8630	3770	10876	1412
	'45-'42	3063	1152	1374	16474	2046	1616	379	119	2674	2926	849	4365	3528	3392	2998	3210	1890	724	604	2712	3123	3713	1494	4710	585
	'41	12808	4226	5702	74714	8302	7504	1252	567	9981	11464	3145	17010	13665	12913	12737	14048	6364	2994	3311	12679	11735	14902	5601	20833	2496
	'40	7649	2530	3625	45656	5021	5516	799	355	6930	7909	2070	11715	9242	8845	7400	8691	4193	2346	2826	8758	8766	10296	3784	15542	1682
	'39	8079	1620	2473	28021	3594	3213	540	177	3695	4957	1269	7082	5209	6842	5194	5310	2638	1478	1574	5323	5104	6940	2265	10245	1137
	'38	1713	1019	1033	19776	2065	1491	344	94	1840	1516	716	4138	3011	4079	3470	2439	1363	734	868	2052	2437	3346	1029	5796	827
	'37	2331	1288	1054	25808	2432	1978	393	104	2058	2062	988	4336	4089	4044	3689	2833	1211	758	1021	2560	3992	4952	1102	6057	807
	Before '37	2084	1422	1090	37392	3060	2062	397	102	2523	2488	1076	4742	4682	4791	4453	2757	1381	1168	1327	2234	3924	6803	1290	7880	1144
	Unid.*	186	39	86	295	38	33	2726	2255	1060	1865	48	1552	291	116	243	291	257	46	32849	133	1418	100	200	14	2
	Total	208521	64938	98223	986342	127874	147092	34182	37379	248166	232688	48604	586265	330053	235394	195945	195662	179880	56364	156774	278307	537961	257845	108552	334082	48947
CHRYSLER	'55	982	436	416	8009	1078	1873	206	442	2301	1160	402	6505	2767	1568	1086	869	898	407	838	2868	6368	1796	492	2004	409
	'54	961	389	390	8059	1003	2105	220	540	2610	1065	337	7288	2611	1480	1079	767	1122	349	1392	2720	4845	1880	549	1829	394
	'53	1531	801	712	12172	1488	2890	388	745	3894	1578	594	11240	4556	2346	1807	1558	1688	708	1886	4865	9688	3059	1048	2839	575
	'52	901	562	391	9868	1063	1472	185	469	2468	1116	479	5770	2424	1394	1218	832	968	340	1345	2272	3819	1739	593	1677	411
	'51	1338	786	588	15886	1747	2308	340	734	3714	1517	605	8956	3716	2377	1702	1407	1348	513	1836	3724	5891	3120	838	2822	617
	'50	1545	956	767	19635	2163	2897	329	903	4344	1913	668	10666	4578	2924	2069	1735	1706	695	1582	4854	8566	3944	1007	3521	703
	'49	1265	772	625	13237	1735	2263	288	729	3499	1391	567	8542	3771	2490	1973	1635	1337	562	1266	3858	5065	3266	740	3059	591
	'48	1057	618	508	10464	1420	1552	212	508	2529	1386	474	6039	2786	1802	1475	1206	1183	488	998	3002	3923	2362	748	2313	434
	'47	842	638	373	9634	1171	1452	223	332	2184	890	411	4802	2409	1585	1242	1115	854	391	671	2622	3226	2079	827	1916	387
	'46	575	397	239	7301	746	1072	147	218	1540	512	275	3160	1626	920	667	721	464	282	485	1909	1774	1253	250	1194	219
	'45-'42	96	121	48	2828	150	231	58	31	343	105	67	395	270	163	112	202	108	41	30	380	234	306	56	276	60
	'41	467	610	219	14025	1007	1517	239	198	1629	621	293	2219	1306	848	696	761	412	276	317	1863	1283	1395	229	1394	329
	'40	281	255	125	6211	478	732	95	93	810	296	166	1184	511	458	367	487	211	161	423	1066	862	717	143	807	153
	'39	131	157	50	4008	266	391	89	34	399	164	70	563	355	250	207	250	115	98	209	590	433	347	72	460	88
	'38	58	83	27	1955	109	203	32	26	173	57	65	275	175	134	108	123	50	61	102	287	144	202	21	210	49
	'37	53	118	26	2579	179	199	45	21	197	73	72	382	251	157	128	130	37	80	94	332	216	274	33	226	66
	Before '37	39	81	19	2727	182	222	19	14	171	62	61	257	236	214	106	103	32	57	106	184	200	253	40	208	73
	Unid.*	32	2	7	38	14	16	258	421	111	111	7	241	75	17	20	41	31	11	3808	32	144	15	19	2	
	Total	12184	7788	5531	145736	16000	23395	3351	6458	32918	14349	5661	78452	34705	21134	16050	13942	12566	5520	17388	37518	53603	28007	7405	28559	5570
DE SOTO	'55	638	265	322	5884	534	930	157	391	1455	787	267	4387	2418	991	727	634	716	423	870	2244	4348	1493	443	1963	218
	'54	619	280	330	4726	498	1194	160	402	1851	759	282	4800	2343	987	766	621	761	395	1068	2572	3956	1400	405	1494	276
	'53	1085	482	760	10086	894	1933	265	526	2695	1352	471	8867	3992	1749	1253	1090	1546	626	1429	4258	7687	2519	671	2825	448
	'52	722	468	524	7977	679	1259	190	344	1729	878	374	5688	2423	1206	931	683	1071	376	1053	2775	3965	1687	432	1861	313
	'51	804	426	542	9689	797	1595	204	354	2031	972	372	6569	2741	1507	1143	872	1136	452	1157	3486	4536	2035	503	2361	336
	'50	1080	648	818	13092	1216	2048	284	511	2797	1349	509	8631	3789	2012	1510	1189	1610	546	1091	4351	5459	2858	654	3133	440
	'49	899	548	514	11935	980	1796	247	416	2320	975	498	7011	3104	1541	1196	1021	881	439	1059	3878	4417	1906	401	2295	378
	'48	787	477	294	9671	698	1254	168	324	1686	1063	348	5036	2021	1066	852	795	755	401	850	2719	3309	1273	352	1631	247
	'47	510	447	224	8742	616	1091	129	218	1555	694	269	3802	1745	919	700	695	507	380	562	2349	2969	1081	207	1267	201
	'46	402	327	179	6798	455	942	94	144	1125	468	195	2517	1271	656	511	516	329	230	353	1761	1571	864	150	1051	173
	'45-'42	106	103	43	2206	107	160	29	21	182	85	50	280	198	102	128	99	74	54	40	258	134	185	40	178	31
	'41	304	321	134	9426	455	860	112	77	844	339	220	1348	905	410	394	393	226	180	217	1397	778	676	121	919	110
	'40	222	181	75	4790	278	647	74	57	504	191	135	912	623	252	243	295	159	138	197	833	503	456	96	620	67
	'39	123	137	44	3309	179	394	47	25	305	130	77	441	354	140	133	163	72	76	116	499	237	255	50	485	39
	'38	36	58	21	1766	87	192	22	9	126	53	38	231	144	72	83	74	37	33	47	204	108	169	24	210	23
	'37	48	67	29	2510	142	226	37	12	142	45	46	292	227	93	104	120	23	63	53	245	183	209	19	235	33
	Before '37	33	68	14	2282	79	125	14	5	96	27	39	169	185	81	69	74	30	43	55	85	120	119	12	128	29
	Unid.*	12	2	4	36	6	7	165	282	91	63	5	163	35	6	21	21	8	2	2738	10	114	8	9	1	
	Total	8410	5285	4871	114725	8700	16643	2398	4120	21536	10230	4175	61144	28518	13792	10764	9355	9946	4057	12955	33724	43754	19195	4889	22595	3382

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

STATES AND MODEL YEAR

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
BUICK	'55	3058	524	1043	18351	2093	39322	6908	878	23752	4420	4096	27953	1789	3124	1179	5607	23648	1982	623	6100	3897	2205	9487	678	414941
	'54	3783	597	1257	14963	1641	40507	6205	1224	29418	5990	3934	28509	2104	3079	1670	5784	22682	1438	807	7272	4909	3334	11993	1034	423826
	'53	3938	712	1165	15339	2157	43418	9229	1539	29770	5972	4041	31702	1879	4224	1646	7230	25240	1922	967	7172	4970	3517	11259	1179	456016
	'52	2567	533	799	9943	1433	26678	5265	1045	18110	3744	3265	19051	1067	2589	1077	4293	15802	1339	617	4853	4119	2234	6676	856	282874
	'51	3550	695	1070	14150	1851	35729	7010	1389	24525	4586	4496	24622	1543	3097	1614	5784	19399	1916	789	6277	6079	2974	9535	1063	372960
	'50	5716	1031	1699	23302	2930	57163	12422	1924	40109	8196	7532	38735	2853	5117	2670	9961	34136	3670	1245	9397	10632	5064	15542	1727	613489
	'49	2322	550	992	12727	1044	30943	4621	791	20874	3800	3540	18938	1510	1894	1082	3925	11488	1591	653	5210	5265	2669	7049	686	290643
	'48	1426	359	639	7345	616	18827	2684	471	13097	2174	2313	11849	1001	1266	640	2263	7064	924	456	3230	3588	1683	4513	433	183101
	'47	1466	439	669	8904	659	21357	3309	507	14284	2333	2766	12923	1208	1368	691	2473	7179	1132	481	3262	4098	2126	4728	417	198678
	'46	740	208	388	4552	337	10984	1757	284	6990	1176	1601	6518	688	739	363	1369	3673	546	299	1785	2388	1275	2479	228	103595
	'45-'42	275	96	79	884	99	1957	489	107	1222	423	686	1302	201	216	116	386	1048	208	48	325	991	351	596	77	27954
	'41	1040	368	449	5026	368	11061	2503	318	6277	1617	2921	7696	885	1269	413	1717	3690	901	329	1982	4246	1695	3316	291	132167
	'40	701	217	451	4235	244	9949	1620	232	4656	1084	1570	6411	801	892	277	971	2027	485	355	1474	2347	1290	2329	186	97055
	'39	355	96	234	2113	111	4863	795	110	2113	641	722	3362	429	442	158	499	948	219	185	773	1130	662	1237	84	47593
	'38	253	72	127	1451	64	3318	445	60	1210	367	474	2145	205	242	99	231	596	125	122	463	653	340	733	58	29973
	'37	286	94	152	1473	57	3162	389	62	1497	399	581	2534	217	208	108	224	476	146	120	400	870	326	821	80	32744
	Before '37	306	70	149	1134	44	2155	226	70	937	304	361	1671	172	130	121	142	482	93	112	285	519	175	553	71	25090
	Unid.*	17	8	11	169	10	229	8	5	134	72	13	390	11	13	10	147	523	1		26	89	3	5	2	17257
	Total	31797	6689	11373	146061	15758	361622	65867	11016	238975	47312	44912	246313	18553	29929	13934	53008	180099	18838	8188	60296	60790	31925	92851	9170	3749956
CADILLAC	'55	482	219	158	4182	412	9848	1148	213	4741	787	901	5106	516	423	192	839	4789	339	95	986	691	326	1727	155	88053
	'54	524	270	210	4059	391	9168	1173	162	5135	1154	888	5050	472	499	197	917	5111	350	117	1283	885	478	1720	194	88531
	'53	535	394	206	4566	440	10449	1549	208	5764	1116	1086	5605	504	684	199	1132	5668	476	105	1263	1293	512	1716	236	96933
	'52	463	319	186	3832	395	8106	1244	184	4727	899	945	4481	421	587	163	999	4605	498	93	1131	1234	447	1365	167	81994
	'51	483	418	218	4680	493	9585	1645	169	5541	1169	1119	5079	594	782	219	1237	5719	632	88	1227	1617	495	1729	208	97533
	'50	392	438	221	4317	464	8843	1433	106	5095	1016	1214	4766	511	639	189	1007	5359	596	129	1198	1865	506	1617	178	94482
	'49	386	331	192	3919	359	8099	1341	135	4586	937	1009	4367	516	715	193	901	4078	515	123	1044	1619	482	1446	171	82907
	'48	170	156	114	2427	152	5038	617	53	2879	493	515	2563	281	297	70	497	1766	221	69	581	819	280	872	67	48259
	'47	190	201	149	2772	162	5838	734	51	2944	442	474	2836	321	348	62	562	1793	199	76	648	844	334	902	72	49718
	'46	77	88	83	1251	73	2605	301	8	1350	242	233	1190	129	165	25	223	787	104	35	293	438	142	364	25	22256
	'45-'42	40	34	21	432	31	823	164	4	398	70	117	514	55	84	9	83	322	44	12	82	221	56	143	10	8821
	'41	123	164	101	1604	113	3344	546	24	1688	388	453	1877	266	334	39	348	1162	181	66	463	769	255	618	45	38233
	'40	34	56	45	773	50	1531	193	12	655	155	179	892	127	106	22	129	331	65	37	191	269	128	271	15	14382
	'39	26	45	39	497	29	1006	134	9	421	93	150	567	87	91	11	86	222	53	33	113	178	66	135	9	9621
	'38	18	17	16	202	15	451	62	3	169	44	68	229	36	35	4	26	83	20	13	44	89	37	54	4	4376
	'37	21	22	14	290	12	548	51	4	242	43	84	367	37	34	9	32	57	28	24	50	140	51	73	10	5649
	Before '37	18	23	9	210	10	286	27	2	158	41	70	201	37	26	9	17	66	24	18	31	93	14	48	2	3927
	Unid.*	6	6		55	3	75	1	1	29	13	4	82	3	3	3	24	123			5	25				3758
	Total	3988	3201	1986	40068	3604	85653	12363	1348	46552	9102	9509	45771	4913	5852	1635	9058	42041	4347	1131	10633	13089	4008	14800	1588	837333
CHEVROLET	'55	6961	1151	3386	32873	5680	72816	19248	3715	50477	10659	12044	55112	4331	9796	3077	17558	71211	3517	2218	12984	9619	5382	19629	2009	975703
	'54	11382	1143	4115	35812	5229	88941	22422	4514	58359	20301	10217	67890	4951	12563	5140	21650	80871	3597	2404	23687	11884	9137	24789	2605	1110913
	'53	12773	1753	4361	42083	6173	98968	30921	6082	78755	19300	12905	84954	5624	16309	5955	22118	81702	4992	2843	24152	16331	11670	27216	3142	1292010
	'52	8720	1115	2606	25385	3771	59042	19253	3634	49382	12848	9311	52149	3615	9853	3645	14154	48646	3491	1816	15526	11944	7460	17293	2086	794004
	'51	12654	1609	3830	38569	5739	86349	29650	5661	72412	17995	14090	74081	5693	15548	5722	21490	71320	5283	2634	21168	18957	10990	27095	2846	1168577
	'50	14421	1706	4337	41080	6715	93211	34332	5659	80722	22201	15916	78805	6366	18467	6310	25631	83403	6204	2729	27263	22812	13119	29899	3291	1311103
	'49	10932	1263	3326	31358	5167	67964	25217	4811	60967	16896	12835	59376	5059	14914	5005	20350	58235	4831	2190	19994	18102	10798	23809	2397	983215
	'48	8824	779	2327	19815	3397	43291	17962	3451	39291	12286	7905	40439	3082	10836	3926	15036	38347	3117	1488	13851	11340	8487	16703	1668	663184
	'47	8792	674	2025	17808	3294	36755	16864	3385	34376	11397	7762	33758	3053	10267	4242	13624	35682	2923	1326	12096	10822	7771	14996	1595	599570
	'46	4877	417	1203	10248	1804	21356	9997	1857	18160	6276	4757	18804	1780	6060	2396	7493	19753	1660	772	6847	6545	4866	8296	818	338756
	'45-'42	2226	264	297	2842	784	5251	3614	789	5169	2598	2537	4728	671	2462	950	2876	8145	776	194	1646	3588	1788	3366	365	127688
	'41	8883	932	1460	12424	2653	22184	16596	2981	20158	11109	10675	24081	3168	12012	3466	12872	29001	3111	792	9433	15136	7597	14666	1288	537621
	'40	5101	592	1200	9330	1577	17193	10609	1766	14343	7232	6440	17738	2179	8237	2060	7662	17054	2006	738	6913	8774	5559	9831	850	357132
	'39	3835	372	807	4738	1026	9200	7126	1199	7763	4786	4010	10171	1395	5034	1579	4631	10158	1193	467	4307	5700	3285	6539	575	221074
	'38	2363	269	374	2352	554	5047	3135	815	4111	2896	2433	5233	573	2073	979	1925	5905	665	287	2152	3063	1516	3995	323	122110
	'37	2436	331	459	2555	574	4992	3945	746	6117	2600	3292	6793	627	2632	957	2143	5303	832	286	2649	4672	2200	5095	381	144546
	Before '37	3511	370	696	3063	525	5726	3429	1113	6626	3129	3019	7072	623	2694	1219	2062	7295	756	377	2818	4230	2018	5497	492	170380
	Unid.*	83	26	23	508	37	501	44	53	377	215	45	2101	29	59	82	539	2290	1	2	116	249	8	14	8	53552
	Total	128778	14766	36812	332843	54699	736787	274364	52231	607565	184526	140193	643085	52819	159817	56706	214014	674321	48955	23562	207602	183768	113649	258708	26739	10071117
CHRYSLER	'55	646	150	268	5127	493	11722	1534	360	5332	588	1025	7702	549	543	281	1036	3999	443	202	1426	937	649	2071	215	93508
	'54	823	155	283	5791	457	14073	1314	363	5731	753	798	7322	501	476	336	956	3788	308	229	1672	1112	909	1851	229	94032
	'53	1331	392	489	7744	683	19860	2359	702	10650	1296	1481	11994	873	1007	597	1727	6276	692	414	2481	1926	1444	2968	424	153764
	'52	903	255	256	3715	465	8757	1292	433	5732	970	1219	6319	418	567	330	950	4132	468	179	1662	1577	704	1736	313	87228
	'51	1460	360	314	5742	640	13414	1761	610	9026	1260	1879	9278	661	657	559	1418	5783	741	275	2226	2853	1109	2955	395	133638
	'50	1686	410	421	7049	688	15864	2062	706	11747	1681	2238	11900	895	803	645	1734	6737	896	310	2493	3529	1310	3832	469	161801
	'49	1393	262	336	5932	583	12507	1652	615	9157	1504	1739	9967	664	686	674	1473	5334	742	246	2046	2580	1313	3107	394	129461
	'48	1060	249	308	4199	395	9134	1140	408	6481	1208	1182	7096	505	560	483	1202	3933	542	212	1613	2266	980	2223	326	97205
	'47	1002	229	242	3455	340	7877	1019	322	5720	1011	1152	6040	438	449	374	907	3210	504	179	1289	1746	874	1900	198	82236
	'46	535	126	155	2515	187	5543	713	175	3842	620	884	4334	340	337	216	561	1847	267	95	822	1295	686	1185	125	55351
	'45-'42	114	40	31	430	34	939	175	37	605	152	298	728	75	82	36	95	312	87	14	109	406	108	205	20	11825
	'41	458	208	130	2492	226	5322	913	125	3215	624	1643	4900	386	410	194	595	1449	363	114	858	2225	689	1251	167	63405
	'40	261	78	99	1527	101	3028	485	59	1767	368	763	2816	243	220	113	335	737	172	81	528	897	444	705	67	33229
	'39	128	53	44	673	67	1592	265	31	766	177	467	1504	141	128	58	154	368	103	36	201	534	204	363	43	17866
	'38	96	24	31	348	20	886	117	20	361	99	227	754	56	48	36	71	220	46	19	132	282	88	212	16	8935
	'37	79	31	29	355	27	883	101	32	630	98	280	1087	86	44	42	72	158	82	14	97	416	161	248	18	10988
	Before '37	137	35	33	360	22	681	83	38	500	107	224	840	50	54	53	52	186	53	39	89	314	104	242	29	8990
	Unid.*	14	5	5	102	8	128	10	3	76	17	3	154	5	9	4	35	127			21	37	1		1	8236
	Total	12146	3053	3494	57556	5438	131990	16995	5041	81338	12533	17502	94735	6866	7110	5031	13373	48596	6509	2658	19745	24932	11777	27052	3444	1250700
DE SOTO	'55	428	94	210	3777	252	7648	1258	293	4488	544	932	6131	427	542	176	989	2393	425	114	1235	832	448	1581	139	66487
	'54	403	131	230	3743	224	10968	1064	347	5224	769	748	5649	368	463	188	858	2122	298	131	1316	1003	607	1702	149	71536
	'53	657	252	345	5214	403	16242	2039	450	8146	1196	1435	10381	687	912	437	1590	4083	651	171	1843	1595	862	2443	266	121811
	'52	551	156	203	3225	340	9539	1353	327	5186	1076	1076	6081	387	593	309	964	3266	396	136	1312	1455	509	1819	210	80103
	'51	694	164	236	3850	301	11400	1429	396	6218	1211	1152	7176	482	625	390	1079	3471	488	162	1523	1725	607	2057	186	93602
	'50	876	234	290	4952	473	13719	1960	523	9486	1436	1642	9838	722	822	491	1558	4588	671	221	1859	2530	814	2903	296	123561
	'49	597	170	244	4363	292	12385	1442	368	7365	985	1577	8230	622	606	319	1107	3131	621	217	1614	2202	748	2597	227	100988
	'48	466	145	256	2927	269	8148	925	280	5338	783	1038	5799	438	439	309	822	2286	420	150	1322	1686	628	1835	184	74924
	'47	410	130	188	2635	196	6710	769	141	4751	641	1047	5052	312	342	214	656	1870	364	135	1006	1534	580	1653	119	62752
	'46	321	97	148	1932	136	4706	711	120	3422	488	768	3734	213	286	139	488	1291	307	106	831	1224	473	1118	83	46201
	'45-'42	43	26	24	267	23	542	98	24	405	108	233	495	33	67	14	86	244	72	9	88	332	92	168	18	8406
	'41	217	124	116	1310	86	2648	446	79	1956	379	1035	2795	202	235	76	349	736	327	79	483	1759	404	887	84	37978
	'40	105	53	90	1045	59	2029	292	46	1448	213	620	2242	149	112	61	255	457	174	57	344	835	297	639	37	24225
	'39	82	44	58	577	30	1267	176	20	790	117	367	1140	94	82	32	116	255	116	19	201	498	137	305	27	14367
	'38	51	22	31	233	24	583	56	15	328	76	157	581	25	22	17	53	121	48	19	98	232	85	139	9	6894
	'37	69	41	23	296	24	670	70	28	587	80	257	744	63	33	22	65	113	74	25	111	390	107	222	16	9333
	Before '37	54	23	22	202	12	286	44	15	300	46	155	385	33	21	25	29	87	45	15	41	294	49	141	13	6316
	Unid.*	6	2	2	80	2	63		1	47	11	4	84	1	1	1	31	89		2	10	27	3	2		4258
	Total	6830	1910	2702	40628	3146	108053	14150	3473	64485	10139	14241	76517	5258	6205	3210	10977	30509	5377	1768	15267	20153	7468	22211	2084	955724

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

DODGE

Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
'55	1885	829	1018	13711	1376	2433	424	771	3581	2718	716	10088	8182	2984	2037	1887	1888	954	1901	4472	13734	3103	1027	3845	804
'54	1847	705	985	10201	1467	3247	301	737	3482	2443	611	10175	8455	3025	2073	1802	1982	822	2314	4905	8361	2612	976	2458	843
'53	3532	1403	1952	21323	2391	5687	967	1218	6975	4680	1122	19573	8417	4630	3610	3493	3617	1606	3693	9178	18565	5030	1880	6176	1156
'52	2463	892	1487	15937	1911	3883	550	1179	5438	3383	844	15438	5551	3490	3112	2524	2648	1008	3178	6533	10941	4193	1387	4700	852
'51	2813	1162	1624	20084	2306	4603	718	1308	5992	3742	1056	18411	6830	4767	3364	3070	2785	1202	3525	7774	12306	5157	1499	5274	1062
'50	4046	1569	2245	24050	3665	5305	863	1786	7911	4956	1184	22004	9028	6474	4731	3695	4232	1550	3486	10023	14784	7271	1988	7404	1261
'49	3197	1397	1656	22750	2825	4553	726	1327	6588	3807	1285	18227	7988	5901	3811	3480	3752	1349	2710	8648	11911	5505	1624	6382	1134
'48	2307	926	1171	18064	1966	3507	596	1014	4483	3131	722	12780	5608	3258	2575	2554	2679	1186	2204	7061	8843	3545	1227	4505	722
'47	2023	1030	992	16588	2052	3705	523	955	4848	2553	769	12135	5682	3267	2505	2671	2137	1181	1919	6708	8175	3533	908	4250	747
'46	1385	642	679	13245	1350	2296	360	469	2902	1571	536	6944	3524	2067	1617	1729	1294	711	1011	4108	4777	2412	602	2678	459
'45-'42	454	271	223	4952	413	534	107	70	700	412	182	1081	735	505	409	468	446	175	144	911	726	496	182	733	125
'41	1041	744	458	16104	1281	1991	278	301	2367	1089	465	3214	2226	1562	1262	1266	873	563	809	3613	2748	1565	422	2307	373
'40	1012	562	399	12204	1002	1656	212	210	1862	978	403	2925	1997	1228	1022	1220	770	502	723	2852	2292	1451	364	2410	270
'39	565	372	256	9778	730	1032	148	132	1094	594	226	1607	1079	890	598	698	453	296	442	1798	1128	925	216	1623	169
'38	222	167	103	4741	290	503	65	53	486	229	98	660	436	374	341	312	216	149	206	706	443	519	91	624	84
'37	269	352	174	9172	666	1046	119	88	690	299	197	1307	1033	651	582	569	232	297	325	1163	1028	929	105	1083	173
Before '37	306	401	171	13314	793	889	84	79	683	326	274	1280	1107	909	728	653	279	311	332	847	1003	1038	150	1306	279
Unid.*	41	6	20	99	9	17	457	934	219	290	4	442	67	25	50	61	46	7	9021	32	338	18	20	7	
Total	29408	13421	15572	248305	26243	46689	7498	12631	60301	37201	10694	158271	71513	45952	34427	32152	30329	13869	37942	81329	122103	49302	14667	57763	10513

FORD

Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
'55	16552	4817	7570	75603	8939	12242	2321	3709	30089	22434	2884	56296	27503	17764	13093	12590	17443	4562	9970	28981	74126	20919	8498	25052	3668
'54	18611	5475	9744	80856	10114	16468	2613	4691	29290	24151	3269	66370	32877	21674	18371	15032	19773	4174	19132	30009	82494	22934	9738	27294	4464
'53	18709	6260	9211	96482	10414	16420	3409	4482	27175	24395	4449	72226	33370	20606	17839	16022	19219	4749	14977	30789	98081	24551	10326	29068	5017
'52	9690	3521	5099	52589	6203	8215	1825	2645	15109	13114	2685	36726	18156	11051	10301	8944	9947	2664	8699	16908	44966	13600	5681	16233	2651
'51	17078	5531	8123	79462	9703	12295	2743	3065	21660	21944	3915	48367	27127	18103	15685	15823	14886	4065	8813	24970	57571	21013	9348	24081	3897
'50	22210	6710	10390	96162	12143	13689	2812	3301	25815	27901	4472	58575	32006	24722	19512	19716	18761	4754	11292	28441	83537	26344	12104	30707	4464
'49	19566	6193	8776	87371	11310	11623	2496	2621	22442	23352	4379	49794	28686	23954	17307	19112	16036	4346	6720	24264	50864	23295	10567	27441	4048
'48	5295	1263	2399	19464	2575	2217	509	351	5105	7176	983	9017	8501	4909	3929	4242	4364	1152	2876	5372	9326	4935	3255	5928	900
'47	7248	2169	3644	34424	4237	3632	762	824	7981	10139	1671	13237	8713	7143	6331	6704	5842	1724	2540	8426	15458	7457	4315	9502	1407
'46	9076	2284	4332	29670	4807	3699	814	443	7703	12333	1527	12764	7805	7962	6253	6855	6864	2023	1233	8988	14009	9103	6027	9738	1443
'45-'42	1968	751	1100	11145	1373	814	221	61	2143	2197	546	2515	1569	1911	1566	1712	1587	504	211	1881	2639	2421	1248	2414	413
'41	6957	2178	3425	36792	3858	3821	652	307	6605	8836	1425	7561	5611	6909	6218	5501	4993	1551	1009	7653	8710	9823	4672	9366	1294
'40	5119	1266	2176	26319	2841	2477	377	174	5060	9408	973	5457	4110	5036	4015	3559	3314	1091	705	5378	6540	6591	3204	6288	870
'39	2320	706	1086	15823	1675	1384	245	123	2470	3659	558	3111	2324	3293	2288	1862	1896	596	557	2668	3739	4032	1400	3594	494
'38	598	359	394	8627	737	643	147	56	1000	824	226	1271	1007	1417	1010	643	610	252	285	1027	1098	2176	445	1582	230
'37	884	558	469	12703	1143	1064	229	74	1384	1266	403	1961	1831	1676	1534	997	640	357	323	1435	2725	3061	536	2289	408
Before '37	4808	2932	2994	72635	4941	4345	549	240	6596	7432	1813	10021	7610	10293	9032	5250	3582	2022	1430	4296	11386	14531	2620	11032	2106
Unid.*	182	27	83	271	33	43	1468	1896	966	1851	44	1189	278	115	215	256	241	36	22867	155	1661	80	201	26	
Total	166869	53000	81007	838398	98846	114871	24192	28763	218493	222512	38223	456458	248086	187788	154599	144620	149908	40624	113639	226923	546910	216888	94185	241613	37774

FRAZER

Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
'55																									
'54																									
'53																									
'52																									
'51	84	55	32	596	83	131	22	14	210	55	35	756	288	214	172	79	104	42	10	183	442	378	22	210	32
'50	20	10	11	204	16	13	5	6	44	12	12	113	46	36	32	36	10	10	73	37	65	45	8	24	11
'49	218	124	142	1282	201	119	52	32	438	149	149	1474	721	682	416	284	247	88	105	266	957	653	126	477	113
'48	375	232	212	3038	469	320	99	58	827	283	286	3056	1291	1559	903	481	385	112	185	572	1764	1105	218	1082	221
'47	390	257	205	5047	446	506	106	80	973	257	309	2229	1034	779	644	544	341	184	230	895	1395	842	152	899	198
'46																									
'45-'42																									
'41																									
'40																									
'39																									
'38																									
'37																									
Before '37																									
Unid.*	30	4	6	226	8	25	10	47	52	12	6	78	77	19	9	16	11	5	474	16	31	7	6	14	4
Total	1117	682	608	10393	1223	1114	294	246	2544	798	797	7706	3457	3289	2196	1440	1098	441	1077	1969	4654	3030	532	2718	579

HENRY J

Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
'55																									
'54	8	4	2	102		14	3	7	48	45		32	17	16	22	26	21	18	29	39	37	9	7	34	
'53	187	136	97	872	62	238	11	56	533	252	30	470	391	78	226	129	223	173	205	571	786	122	99	250	
'52	383	221	212	1150	94	409	19	119	490	409	60	798	541	152	305	219	343	157	485	682	940	263	181	464	30
'51	935	336	563	3989	441	1491	41	279	1735	1323	193	2829	1922	580	876	651	876	472	873	1648	3339	1041	586	1271	67
'50																									205
'49																									
'48																									
'47																									
'46																									
'45-'42																									
'41																									
'40																									
'39																									
'38																									
'37																									
Before '37																									
Unid.*	43	2	7	197	11	41	3	71	40	51	3	40	78	20	4	25	36	10	668	23	75	7	8	43	2
Total	1536	699	881	6310	606	2193	68	532	2846	2080	286	4169	2949	846	1433	1050	1499	830	2260	2963	5177	1442	881	2062	304

HUDSON

Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
'55	194	109	113	2097	271	428	7	58	496	91	155	3097	644	306	259	127	111	196	203	824	1073	397	105	211	161
'54	381	176	212	2226	523	880	62	210	927	274	255	5488	1631	651	704	343	216	307	489	1404	2749	850	128	465	389
'53	625	368	239	5293	683	1267	147	231	1355	583	424	8400	2001	718	889	561	455	355	895	1676	4304	1172	294	812	468
'52	732	443	291	6892	963	1141	192	342	1494	677	467	5879	1920	625	1213	645	466	370	1331	1504	3425	1001	282	883	473
'51	1128	804	566	11528	1894	1923	300	479	2744	1183	789	11478	4014	1767	2129	1124	826	580	1308	3071	6780	2365	426	1930	872
'50	950	784	462	12633	2014	1343	222	485	2675	1063	583	10751	3940	1848	1675	1237	853	566	1133	2889	6524	3100	352	1775	654
'49	1510	1000	845	13210	2938	1802	282	559	3425	1627	844	10493	4905	2853	2502	1905	1663	800	1384	3189	6271	3613	758	3604	844
'48	1000	577	443	9861	927	1386	220	286	2080	937	440	4467	2427	1421	1336	1152	761	551	946	2599	4841	1743	413	1907	353
'47	733	342	270	6269	543	824	151	155	1338	734	305	2874	1585	879	742	748	440	355	538	1899	2976	927	263	1286	209
'46	640	321	184	5739	462	772	133	128	1208	495	289	2144	1337	776	665	676	350	319	322	1685	2191	823	198	1089	175
'45-'42	108	95	22	1533	115	133	28	9	194	97	86	312	213	153	170	113	55	66	12	236	265	135	35	190	50
'41	210	174	73	4094	222	362	51	30	474	180	132	636	479	311	287	205	101	203	72	637	681	309	46	426	95
'40	148	97	44	2288	204	246	39	23	377	100	82	556	433	274	199	156	96	116	84	403	468	218	40	290	80
'39	46	51	15	1102	113	103	11	6	154	61	40	187	142	103	114	60	49	65	50	214	178	110	10	152	31
'38	27	17	6	574	66	52	9	5	82	25	29	67	90	60	84	25	20	20	32	65	84	74	8	60	14
'37	48	50	19	967	142	127	9	7	141	56	56	140	146	101	146	41	33	77	42	163	259	145	12	124	38
Before '37	48	48	17	1282	137	108	14	12	148	35	53	187	229	142	125	53	21	73	40	144	230	199	23	137	87
Unid.*	12	2	5	446	3	2	124	326	58	60	10	181	30	9	17	22	11	3	2915	7	153	8	3	1	
Total	8538	5458	3826	88036	12240	12899	2001	3353	19370	8278	5039	69337	28186	12999	13256	9193	6527	5022	11796	22609	43452	17189	3396	15342	4993

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
DODGE	'55	1068	217	578	6559	820	14999	2583	670	10184	1104	1857	13956	831	1334	897	2324	6675	735	313	2492	1918	1598	3336	271	160167
	'54	1260	260	638	6368	642	18320	2449	658	11118	1431	1633	11709	826	1184	635	2224	6607	308	426	2980	2057	1766	3549	346	152303
	'53	1921	535	1115	10751	1175	34449	5038	985	20267	2514	2886	22392	1780	2556	1310	4678	14560	1182	679	4311	3726	2920	5690	584	290088
	'52	1566	322	681	6355	838	24443	3567	787	14007	2802	2043	15777	1028	1836	794	3339	11346	731	547	4028	2849	2104	4899	413	212402
	'51	2241	326	814	10813	992	29292	4152	900	17235	2839	2524	19093	1329	2127	1113	3650	11576	1011	494	4619	3919	2496	6308	532	252809
	'50	2810	389	995	13686	1249	35882	5573	1046	21890	3803	3464	23850	1808	2768	1373	5159	17273	1311	619	5479	5245	2841	7451	740	322004
	'49	2527	341	918	11226	1087	29689	4765	1031	18691	3157	3510	19649	1559	2220	1304	4093	14775	1225	655	4535	5055	2708	6592	654	274301
	'48	1466	283	777	8359	656	21715	2811	622	13279	2179	2191	15043	1067	1479	962	2751	8377	891	484	3559	3419	1963	4258	388	195613
	'47	1484	271	688	9005	708	22255	3103	500	14035	2055	2190	15145	1074	1375	880	2616	8401	876	422	3449	3429	2125	4396	343	194842
	'46	847	175	436	5736	411	13295	2071	330	8536	1307	1578	9438	752	943	526	1659	5158	578	257	2125	2469	1464	3013	222	122844
	'45-'42	272	61	70	1021	136	2166	487	119	1423	391	816	1610	170	271	123	463	1285	216	62	381	870	358	534	73	28852
	'41	674	185	285	3705	306	8063	1448	230	5313	1098	2082	6410	631	720	324	1276	3280	465	185	1671	3326	1181	2073	181	93976
	'40	628	154	257	3168	252	6363	1373	176	4387	960	1514	5503	506	672	271	1118	2994	446	195	1358	2161	1104	1771	142	77999
	'39	397	112	152	1734	129	4110	809	112	2220	643	944	2859	347	422	180	640	1681	260	99	774	1544	566	1097	105	48735
	'38	201	49	81	812	61	2102	299	61	1004	305	396	1496	118	173	91	226	676	112	56	363	644	299	527	34	22304
	'37	325	119	143	1407	148	3152	438	84	2168	470	1026	3200	225	284	146	402	914	256	96	505	1387	505	1078	95	41122
	Before '37	531	147	130	1233	125	2721	428	122	2375	622	1041	2777	229	306	207	365	973	268	121	575	1565	582	1091	118	46194
	Unid.*	17	10	2	156	9	170	11		122	34	13	301	7	5	4	77	335			20	61	2	2	1	13591
	Total	20235	3956	8760	104094	9744	273186	41405	8413	168254	27714	31708	190008	14287	20675	10840	37080	116886	10671	5910	42904	45644	26582	57665	5252	2550148
FORD	'55	7316	1177	2769	30420	4566	62289	19683	3347	51041	9700	10248	50944	3931	9065	2798	15871	62783	3137	1652	14365	9169	5104	18774	1629	907793
	'54	11553	1423	3427	38307	4518	83644	22330	4594	65934	19091	10724	59106	4686	11280	5177	19903	72934	2651	2133	25320	13906	8844	26379	2165	1097597
	'53	11299	1948	3343	38587	5156	83343	26792	5274	72005	17159	13246	76399	5337	13207	4793	19120	74471	4582	2263	22001	17289	9408	23740	2552	1169518
	'52	6951	1015	1990	20386	2960	43147	15358	2925	37106	11517	7291	39150	2880	7629	2663	10216	40220	2881	1192	14325	9868	4984	12924	1429	627549
	'51	10718	1336	2687	29180	4368	64392	29545	4578	57627	15761	10527	55073	5044	14060	4557	18412	60260	4425	1681	19496	15232	7934	19726	2031	936998
	'50	13628	1540	3192	31774	5322	71327	38331	5077	66448	20268	12525	64821	5850	20353	5519	23519	76303	5266	2006	24868	18900	10599	24978	2329	1137285
	'49	12481	1389	2912	24561	4733	59621	31396	5054	57491	15412	1150C	51590	4632	18357	5465	21560	62443	4989	1807	19291	18299	9499	22070	2187	975282
	'48	3744	295	770	4321	1100	11156	7733	1200	10600	6706	2568	9224	825	4335	1525	4983	15889	1023	506	7579	4149	2524	3949	485	220232
	'47	5351	562	1010	7556	1698	18454	13329	1918	18303	7931	4210	15872	1286	7366	2212	7034	23024	1670	746	9013	6889	4418	6465	885	342432
	'46	5505	436	1118	6786	1557	17018	13490	2160	15842	7606	3964	15739	1631	8551	2511	7915	23784	1475	689	7275	5590	4248	7223	835	340401
	'45-'42	1289	206	200	1399	589	2822	2453	594	2842	2082	1565	2590	362	1447	548	1782	6310	680	150	1356	2509	806	1614	239	81344
	'41	5318	494	836	4560	1308	8764	10778	2264	9951	8382	3942	10012	1377	7906	2159	5883	19837	1554	390	5274	6056	3569	8895	737	282773
	'40	3916	342	672	2930	877	6170	10614	1330	7462	5399	2675	6606	982	8333	1465	4790	13555	950	403	4702	3904	2461	4381	435	207574
	'39	2333	201	382	1534	445	3481	4070	688	4407	3106	1518	3514	611	3624	879	1897	6837	578	225	2519	1950	1394	3013	285	111267
	'38	1088	121	137	668	152	1587	1075	356	1505	1307	683	1508	205	1042	376	531	2577	205	85	867	845	424	1505	144	45653
	'37	1217	152	221	1085	203	2504	1460	485	3555	1415	1293	3175	317	1428	594	736	2925	381	126	1134	1678	904	2525	212	69695
	Before '37	8306	1066	1186	4439	1337	9221	8406	3708	13365	7709	5845	11836	1051	8660	2864	4126	14933	1660	808	5182	8779	4298	9083	1140	343496
	Unid.*	69	23	15	338	24	312	70	54	248	198	45	986	18	83	44	432	1394		1	103	181	39	14	4	38779
	Total	112082	13726	26847	246831	40933	549232	256913	45606	495730	160769	104369	478143	41025	146816	46149	168680	579479	38107	16863	184670	145093	81457	195258	19723	8935688
FRAZER	'55																									
	'54																									
	'53																									
	'52																									
	'51	55	9	17	351	25	929	109	21	674	26	164	813	39	25	58	79	245	68	15	46	213	87	312	20	8649
	'50	21	6	13	27	13	112	12	6	92	58	22	108	10	4	10	11	44	13	8	76	41	20	39	4	1689
	'49	242	32	39	408	92	1148	309	149	1262	165	256	1285	63	81	262	198	643	125	36	235	412	174	710	57	17896
	'48	506	75	78	1050	160	2441	467	183	2172	423	617	1724	128	143	289	350	1168	235	57	520	789	351	1102	86	34257
	'47	534	75	83	1324	137	3251	603	182	2064	398	820	2020	169	218	297	317	990	226	56	592	1020	418	909	107	35761
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	7	2	3	34	3	58	21		47	10	18	10	9	5	2	7	50		1	16	29	3	10	1	1539
	Total	1385	199	233	3192	430	7939	1521	541	6311	1080	1897	5960	418	476	918	962	3140	667	173	1485	2504	1053	3082	275	99791
HENRY J	'55																									
	'54	1		4	27		85	18	1	35	2	3	56	13	6	4	9	12		3	24	4	8	16		871
	'53	115	13	74	550	39	1403	268	7	936	47	162	1195	102	161	22	263	515	69	58	242	149	122	154	4	12897
	'52	128	13	104	939	66	1828	523	24	1207	133	246	1629	125	321	34	385	1066	103	53	760	290	175	217	17	19519
	'51	364	75	279	3317	226	6271	2043	110	4276	477	816	5428	351	938	224	963	2097	163	163	1459	929	804	988	57	61311
	'50																									
	'49																									
	'48																									
	'47																									
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	5	2	3	37	4	54	31	9	52	36	3	10	2	4	4	17	54	3	1	155	11	6	195	1	2207
	Total	613	103	464	4870	335	9641	2883	151	6506	695	1230	8317	593	1430	288	1637	3744	336	278	2640	1383	1115	1568	79	96805
HUDSON	'55	81	20	236	781	42	1329	239	30	916	143	365	1251	135	142	86	195	529	80	34	340	232	91	958	55	20047
	'54	185	53	288	2110	126	4326	447	124	3130	314	419	3333	332	293	151	350	841	162	74	877	670	387	1244	121	42300
	'53	309	119	397	2427	279	5559	712	188	4013	445	684	4443	374	432	220	572	1539	358	93	1170	1084	419	1376	171	59798
	'52	411	143	290	2654	291	5658	780	208	4056	626	1061	4506	298	480	197	715	2124	445	108	1481	1242	454	1245	245	63573
	'51	1050	220	466	4827	507	9737	1515	477	7689	989	1807	8001	440	826	567	1283	3524	961	188	1732	2331	825	3326	371	115687
	'50	726	215	386	4078	441	9555	1347	287	7046	1105	1364	6919	448	639	492	1165	3597	913	177	1922	1839	724	3178	297	109371
	'49	963	218	473	4613	574	10402	1637	499	8940	1346	1801	8129	563	994	700	1759	4810	1274	299	2313	2305	1109	3806	481	133054
	'48	887	173	312	3193	283	7383	1304	214	5554	1089	1162	5470	495	603	295	1085	3026	504	149	1513	1782	791	2005	160	82306
	'47	374	71	205	2039	144	4478	891	90	3206	566	817	3437	335	502	167	640	1672	248	110	839	1340	667	1201	104	51547
	'46	331	76	188	1429	112	3419	737	83	2593	476	759	2988	327	431	126	480	1153	242	95	660	1274	566	1054	83	42803
	'45-'42	76	16	24	162	16	367	114	12	336	84	189	357	36	82	20	59	188	93	15	70	337	66	201	26	7371
	'41	118	40	72	521	33	990	230	26	890	151	503	1016	118	178	35	136	348	119	40	211	833	204	537	58	17907
	'40	70	21	72	434	26	899	191	21	668	122	281	635	78	112	33	99	286	75	33	192	414	138	369	34	12100
	'39	40	12	35	137	11	342	89	9	223	59	94	394	40	56	14	46	109	39	32	80	194	61	165	16	5456
	'38	18	8	12	66	7	189	34	15	112	41	61	185	16	29	6	16	92	25	11	29	119	24	80	7	2797
	'37	48	16	23	149	13	276	53	19	352	53	151	359	20	56	12	32	109	41	24	50	308	78	161	17	5507
	Before '37	65	19	35	143	10	282	53	21	327	77	187	292	23	50	34	31	119	34	20	46	258	56	184	33	5990
	Unid.*	4	5	4	42	2	43	4	2	25	11	3	55	1	3	4	22	83			14	21	1	1	2	4760
	Total	5577	1444	3498	29804	2917	65234	10577	2327	50086	7699	11908	51772	4079	5908	3159	8685	24129	5633	1502	13499	16573	6677	21091	2281	762374

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
DODGE	'55	1888	829	1018	13711	1378	2433	424	771	3581	2718	716	10068	5182	2984	2037	1887	1888	954	1901	4472	13734	3103	1027	3845	804
	'54	1847	705	985	10201	1467	3247	301	737	3482	2443	611	10175	4855	3025	2073	1802	1982	822	2314	4905	8361	2612	976	2458	843
	'53	3532	1403	1952	21323	2391	5687	967	1218	6975	4680	1122	19573	8417	4630	3610	3493	3617	1606	3693	9178	18565	5030	1880	6176	1156
	'52	2463	892	1487	15937	1911	3683	550	1179	5438	3383	844	15438	5551	3490	3112	2524	2646	1008	3178	6533	10941	4193	1387	4700	852
	'51	2813	1162	1624	20064	2306	4803	718	1308	5992	3742	1056	18411	6830	4767	3364	3070	2785	1202	3525	7774	12306	5157	1499	5274	1062
	'50	4046	1560	2245	24050	3665	5305	953	1786	7911	4956	1184	22004	9028	6474	4731	3695	4232	1550	3486	10023	14784	7271	1986	7404	1261
	'49	3197	1397	1655	22758	2625	4553	726	1327	6598	3807	1285	18227	7986	5901	3811	3480	3752	1349	2710	8845	11911	5505	1624	6382	1134
	'48	2307	926	1171	18084	1966	3507	596	1014	4483	3131	722	12780	5606	3258	2575	2554	2679	1186	2204	7061	8843	3545	1227	4505	722
	'47	2023	1030	952	18588	2052	3705	523	955	4548	2553	769	12135	5882	3267	2505	2671	2137	1181	1919	6708	8175	3533	909	4250	747
	'46	1385	642	679	13245	1300	2298	360	469	2902	1571	536	6944	3524	2067	1617	1729	1294	711	1011	4106	4777	2412	802	2876	459
	'45-'42	454	271	223	4952	413	534	107	70	700	412	182	1081	755	505	409	468	446	175	144	911	726	496	182	733	125
	'41	1041	744	458	16104	1281	1991	278	301	2367	1089	465	3214	2226	1507	1262	1266	873	563	808	3613	2748	1565	422	2307	373
	'40	1012	562	399	12204	1002	1656	212	210	1862	978	403	2925	1997	1228	1022	1220	770	502	723	2852	2292	1451	364	2410	270
	'39	565	372	256	9778	730	1032	148	132	1084	594	226	1607	1029	890	596	698	453	296	442	1798	1128	925	216	1623	169
	'38	222	167	103	4741	290	503	65	53	486	229	98	660	436	374	341	312	216	149	206	706	443	519	91	624	84
	'37	289	352	174	9172	666	1046	119	88	690	299	197	1307	1033	651	582	569	232	297	325	1163	1028	929	105	1083	173
	Before '37	306	401	171	13314	793	889	84	79	683	326	274	1280	1107	909	728	653	279	311	332	847	1003	1038	150	1306	279
	Unid.*	41	6	20	99	9	17	457	934	219	290	4	442	67	25	50	61	48	7	9021	32	338	16	20	7	
	Total	29408	13421	15572	248305	28243	46689	7498	12631	60301	37201	10694	158271	71513	45952	34427	32152	30329	13869	37942	81329	122103	49302	14667	57763	10513
FORD	'55	16552	4817	7570	75603	8939	12242	2321	3709	30089	22434	2884	56296	27503	17764	13093	12590	17443	4562	9970	28981	74126	20919	8498	25052	3668
	'54	18611	5475	9744	80856	10114	16468	2613	4691	29290	24151	3269	66370	27677	21674	16371	15032	19773	4174	19132	30009	82494	22834	9738	27294	4464
	'53	18709	6260	9211	96482	10414	16420	3409	4482	27175	24395	4448	72226	33370	20606	17839	16022	19219	4749	14977	30769	96061	24551	10326	29066	5017
	'52	9690	3521	5095	52589	6203	8215	1825	2645	15109	13114	2685	36726	18156	11051	10301	8944	9947	2664	8699	16908	44966	13600	5681	16233	2651
	'51	17078	5531	8123	79462	9703	12295	2743	3965	21660	21944	3915	48367	27127	18103	15685	15823	14886	4065	8813	24970	57571	21013	9348	24061	3897
	'50	22210	6710	10390	98162	12143	13669	2812	3301	25815	27901	4472	58575	32008	24722	19512	19716	18764	4754	11292	29441	63537	26344	12104	30707	4464
	'49	19566	6193	8776	87371	11110	11623	2496	2621	22442	23352	4379	49794	28666	23014	17307	19112	16038	4346	6720	24264	59864	23295	10567	27441	4048
	'48	5295	1263	2399	19464	2575	2217	509	351	5105	7176	983	9017	5501	4908	3929	4242	4364	1152	2876	5372	9326	4935	3255	5928	900
	'47	7248	2169	3644	34424	4237	3632	782	524	7981	10139	1671	13237	8713	7143	5331	6704	5842	1724	2540	8476	15458	7457	4315	9502	1407
	'46	9076	2284	4332	29670	4607	3899	814	443	7703	12333	1527	12764	7805	7982	6753	6855	6864	2023	1233	8988	14009	9103	6027	9738	1443
	'45-'42	1968	751	1100	11145	1373	814	221	61	2143	2197	546	2515	1589	1911	1566	1712	1587	504	211	1881	2639	2421	1248	2414	413
	'41	6957	2178	3425	36792	3858	3821	852	307	6605	8936	1425	7561	5611	6909	6218	5501	4993	1551	1009	7653	8710	9823	4672	9366	1294
	'40	5119	1266	2178	26319	2841	2477	377	174	5060	9408	973	5457	4110	5036	4015	3559	3314	1091	705	5378	6540	6591	3204	6288	870
	'39	2320	706	1086	15823	1675	1384	245	123	2470	3659	559	3111	2324	3293	2288	1882	1816	598	557	2668	3739	4032	1400	3594	494
	'38	596	359	394	8627	737	643	147	56	1000	824	226	1271	1007	1417	1010	643	610	252	285	1027	1098	2176	445	1582	230
	'37	884	558	469	12703	1143	1064	229	74	1384	1266	403	1961	1831	1678	1534	997	640	357	323	1435	2725	3081	536	2289	408
	Before '37	4808	2932	2984	72635	4941	4345	549	240	6596	7432	1813	10021	7610	10293	9032	5250	3582	2022	1430	4298	11386	14531	2620	11032	2106
	Unid.*	182	27	83	271	33	43	1468	1896	866	1851	44	1189	278	115	215	256	241	36	22867	155	1661	80	201	26	
	Total	166889	53000	81007	838396	96946	114871	24192	28763	218493	222512	36223	456458	240066	187788	154599	144820	149908	40624	113639	228923	548910	216888	94185	241613	37774
FRAZER	'55																									
	'54																									
	'53																									
	'52																									
	'51	84	55	32	596	83	131	22	14	210	55	35	756	288	214	172	79	104	42	10	183	442	378	22	210	32
	'50	20	10	11	204	16	13	5	6	44	12	12	113	46	36	52	38	10	10	73	37	65	45	8	24	11
	'49	218	124	142	1282	201	119	52	32	438	149	149	1474	721	682	416	284	247	88	105	266	957	653	126	477	113
	'48	375	232	212	3038	469	320	99	58	827	263	286	3056	1291	1559	903	481	385	112	185	572	1764	1105	218	1092	221
	'47	390	257	205	5047	448	505	106	89	973	257	309	2229	1034	779	644	544	341	184	230	895	1395	842	152	899	198
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	30	4	6	226	8	25	10	47	52	12	6	78	77	19	9	16	11	6	474	18	31	7	6	14	4
	Total	1117	682	608	10393	1223	1114	294	246	2544	768	797	7706	3457	3269	2196	1440	1098	441	1077	1989	4854	3030	532	2716	579
HENRY J	'55																									
	'54	8	4	2	102		14	3	7	48	45		32	17	16	22	20	21	18	29	39	37	9	7	34	
	'53	187	138	97	872	62	238	11	56	533	252	30	470	391	78	226	129	223	173	205	571	796	122	99	250	
	'52	363	221	212	1150	94	409	10	119	490	409	60	798	541	152	305	219	343	157	485	682	940	263	181	464	30
	'51	935	336	563	3988	441	1491	41	279	1735	1323	193	2829	1922	580	876	651	876	472	873	1646	3339	1041	586	1271	67
	'50																									205
	'49																									
	'48																									
	'47																									
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	43	2	7	197	11	41	3	71	40	51	3	40	78	20	4	25	36	10	668	23	75	7	8	43	2
	Total	1536	699	881	6310	608	2193	68	532	2848	2060	286	4169	2949	946	1433	1050	1499	830	2260	2963	5177	1442	881	2082	304
HUDSON	'55	194	109	113	2097	271	428	7	58	496	91	155	3097	644	308	259	127	111	196	203	824	1073	397	105	211	161
	'54	381	176	212	2226	323	880	62	210	927	274	255	5488	1631	651	704	343	216	307	489	1404	2749	850	128	465	389
	'53	625	368	239	5293	683	1267	147	231	1355	583	424	9400	2001	718	889	561	455	355	895	1676	4304	1172	294	812	468
	'52	732	443	291	6892	963	1141	192	342	1494	677	467	5879	1920	625	1213	645	486	370	1331	1504	3425	1001	282	883	472
	'51	1128	804	566	11526	1894	1923	300	479	2744	1183	789	11478	4014	1767	2129	1124	826	580	1308	3071	6780	2365	426	1930	872
	'50	950	784	462	12633	2014	1343	222	485	2675	1063	563	10751	3940	1848	1675	1237	853	566	1133	2589	6524	3100	352	1775	654
	'49	1510	1000	845	13210	2838	1802	282	559	3425	1627	844	10493	4905	2853	2502	1905	1663	800	1384	3189	6271	3613	758	3604	844
	'48	1000	577	443	8861	927	1386	220	266	2068	937	440	4487	2427	1421	1336	1152	761	551	946	2599	4841	1743	413	1907	353
	'47	733	342	270	6269	543	824	151	156	1338	734	305	2874	1585	879	742	748	440	355	536	1899	2976	927	263	1288	209
	'46	640	321	184	5739	482	772	133	128	1208	495	289	2144	1337	776	665	676	350	319	322	1685	2191	823	198	1089	175
	'45-'42	106	95	22	1533	116	133	28	9	194	97	86	312	213	153	177	113	55	66	12	236	265	135	35	190	50
	'41	210	174	73	4094	222	362	51	30	474	180	132	636	479	311	287	205	101	203	72	637	681	309	46	426	95
	'40	146	97	44	2298	204	246	39	23	377	100	82	556	433	274	199	156	96	116	84	403	468	218	40	290	80
	'39	46	51	15	1102	113	103	11	8	154	61	40	187	142	103	114	60	49	65	50	214	178	110	10	152	31
	'38	27	17	6	574	66	52	9	5	82	25	29	67	90	60	84	25	20	20	32	65	84	74	8	60	14
	'37	48	50	19	967	142	127	9	7	141	56	56	140	148	101	146	41	33	77	42	163	259	145	12	124	38
	Before '37	48	48	17	1282	137	108	14	12	148	35	53	187	229	142	125	53	21	73	40	144	230	199	23	137	87
	Unid.*	12	2	5	446	3	2	124	326	58	60	10	181	30	9	17	22	11	3	2915	7	153	8	3	1	
	Total	8538	5458	3829	88036	12240	12899	2001	3353	19370	8278	5039	65337	28168	12999	13256	9193	6827	5022	11796	22609	43452	17189	3396	15342	4993

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
DODGE	'55	1068	217	578	6559	820	14999	2583	670	10184	1104	1857	13956	831	1334	597	2324	8675	735	313	2482	1918	1508	3336	271	160167
	'54	1260	260	638	6368	642	18320	2449	658	11118	1431	1633	11709	826	1184	635	2224	6607	308	426	2660	2057	1766	3549	346	152303
	'53	1921	535	1115	10751	1175	34449	5038	985	20267	2514	2886	22392	1780	2566	1310	4678	14560	1182	879	4311	3726	2920	5690	584	290088
	'52	1566	322	681	8355	838	24443	3567	767	14007	2802	2043	15777	1028	1836	794	3339	11348	731	547	4028	2849	2104	4899	413	212402
	'51	2241	326	814	10613	982	29292	4152	900	17235	2839	2524	19093	1329	2127	1113	3650	11576	1011	494	4619	3919	2496	6308	532	252809
	'50	2810	389	995	13686	1249	35882	5573	1046	21890	3803	3464	23650	1606	2768	1373	5159	17273	1311	619	5479	5245	2841	7451	740	322004
	'49	2527	341	918	11226	1087	29689	4765	1031	18891	3157	3510	19649	1559	2220	1304	4093	14775	1225	655	4535	5055	2708	6592	654	274301
	'48	1486	283	777	8359	656	21715	2811	622	13279	2179	2191	15043	1067	1479	962	2751	8377	891	484	3559	3419	1963	4258	388	195613
	'47	1484	271	688	9005	708	22255	3103	500	14035	2055	2190	15145	1074	1375	880	2616	8401	876	422	3449	3429	2125	4398	343	194842
	'46	847	175	436	5736	411	13295	2071	330	8536	1307	1578	9438	752	943	526	1659	5158	578	257	2125	2469	1464	3013	222	122844
	'45-'42	272	61	70	1021	136	2166	487	119	1423	391	816	1610	170	271	123	463	1285	216	62	381	870	358	534	73	28852
	'41	674	185	285	3705	306	8063	1448	230	5313	1096	2082	6410	631	720	324	1276	3280	465	185	1671	3326	1181	2073	181	93978
	'40	628	154	257	3168	252	6363	1373	176	4387	960	1514	5503	506	672	271	1118	2994	446	195	1358	2161	1104	1771	142	77999
	'39	397	112	152	1734	129	4110	809	112	2220	643	944	2859	347	422	180	640	1681	260	99	774	1544	566	1097	105	48735
	'38	201	49	81	812	61	2102	299	61	1004	305	396	1496	118	173	91	226	676	112	56	363	644	299	527	34	22304
	'37	325	119	143	1407	148	3132	438	94	2168	470	1026	3200	225	284	146	402	914	256	96	505	1387	505	1078	96	41122
	Before '37	531	147	130	1233	125	2721	428	122	2375	622	1041	2777	229	306	207	365	973	268	121	575	1565	582	1091	118	46194
	Unid.*	17	10	2	156	9	170	11		122	34	13	301	7	5	4	77	335			20	61	2	2	1	13591
	Total	20236	3956	8760	104094	9744	273186	41405	8413	188254	27714	31708	190008	14287	20675	10840	37060	116886	10871	5910	42904	45644	26582	57665	5252	2550148
FORD	'55	7216	1177	2769	30420	4566	62269	19683	3347	51041	9700	10248	50944	3931	9055	2798	15871	62783	3137	1652	14365	9189	5104	18774	1629	907793
	'54	11553	1423	3427	36307	4518	83644	22330	4594	65934	19091	10724	59106	4686	11280	5177	19903	72934	2651	2133	25320	13906	8844	26379	2165	1097597
	'53	11299	1948	3343	38587	5156	83343	26792	5274	72005	17159	13246	76399	5337	13207	4793	19120	74471	4582	2263	22001	17289	9408	23740	2552	1169518
	'52	6951	1015	1990	20386	2980	43147	15358	2925	37108	11517	7291	39150	2880	7829	2663	10216	40220	2881	1192	14325	9868	4984	12924	1429	627549
	'51	10718	1336	2687	29180	4368	64392	29545	4578	57627	15761	10527	55073	5044	14060	4557	18412	60260	4425	1681	19496	15232	7934	19726	2031	936998
	'50	13628	1540	3192	31774	5322	71327	38331	5077	66448	20268	12525	64821	5850	20353	5519	23519	76303	5266	2006	24868	18900	10599	24978	2329	1137285
	'49	12481	1389	2912	24561	4733	59621	31396	5054	57491	15412	11500	51590	4632	18357	5465	21560	62443	4989	1807	19291	18299	9499	22070	2187	975282
	'48	3744	295	770	4321	1100	11156	7733	1200	10600	6706	2568	9224	825	4335	1525	4983	15889	1023	506	7579	4149	2524	3949	485	220232
	'47	5351	562	1010	7556	1698	18454	13329	1918	18303	7931	4210	15872	1286	7366	2212	7034	23024	1670	746	9013	6889	4418	6465	885	342432
	'46	5505	436	1118	6786	1557	17018	13490	2160	15840	7606	3964	15739	1631	8551	2511	7915	23784	1475	689	7275	5590	4248	7223	835	340401
	'45-'42	1289	206	200	1399	589	2822	2453	594	2842	2082	1565	2590	362	1447	548	1782	6310	680	150	1356	2509	806	1614	239	81344
	'41	5318	494	836	4560	1308	8764	10778	2264	9951	8382	3942	10012	1377	7806	2159	5883	18837	1554	390	5274	6056	3569	6895	737	282773
	'40	3916	342	672	2930	877	6170	10614	1330	7462	5399	2675	6608	982	8333	1465	4760	13555	950	403	4702	3804	2461	4381	435	207574
	'39	2333	201	382	1534	445	3461	4070	688	4407	3106	1518	3514	611	3624	879	1897	6837	578	225	2519	1950	1394	3013	285	111267
	'38	1088	121	137	668	152	1587	1075	356	1505	1307	683	1506	205	1042	376	531	2577	205	85	867	845	424	1505	144	45653
	'37	1217	152	221	1085	203	2504	1460	485	3555	1415	1293	3175	317	1428	594	736	2925	381	126	1134	1678	904	2525	212	69695
	Before '37	8306	1066	1186	4439	1337	9221	8406	3708	13365	7709	5845	11836	1051	8660	2864	4126	14933	1660	808	5182	8779	4298	9083	1140	343496
	Unid.*	69	23	15	338	24	312	70	54	248	198	45	986	18	83	44	432	1394		1	103	181	39	14	4	38779
	Total	112082	13726	26847	246831	40933	549232	256913	45606	495730	160769	104369	478143	41025	146816	46149	168690	579479	38107	16883	184670	145093	81457	195258	19723	8835668
FRAZER	'55																									
	'54																									
	'53																									
	'52																									
	'51	55	9	17	351	25	929	109	21	674	26	164	813	39	25	58	79	248	68	15	46	213	87	312	20	9649
	'50	21	6	13	27	13	112	12	6	92	58	22	108	10	4	10	11	44	13	6	78	41	20	39	4	1689
	'49	242	32	39	406	92	1148	309	149	1282	165	256	1285	63	81	262	198	643	125	36	235	412	174	710	57	17896
	'48	506	75	78	1050	160	2441	467	183	2172	423	617	1724	128	143	269	350	1168	235	57	520	789	351	1102	86	34257
	'47	534	75	83	1324	137	3251	603	182	2064	398	820	2020	169	218	297	317	990	226	56	592	1020	418	909	107	35761
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	7	2	3	34	3	58	21		47	10	18	10	9	5	2	7	50		1	16	29	3	10	1	1539
	Total	1365	199	233	3192	430	7939	1521	541	6311	1080	1897	5960	418	476	918	962	3140	667	173	1485	2504	1053	3082	275	99791
HENRY J	'55																									
	'54	1		4	27		85	18	1	35	2	3	56	13	6	4	9	12		3	24	4	8	16		871
	'53	115	13	74	550	39	1403	268	7	936	47	162	1195	102	161	22	263	515	69	58	242	149	122	154	4	12897
	'52	128	13	104	939	66	1828	523	24	1207	133	246	1628	125	321	34	385	1066	103	53	760	290	175	217	17	19519
	'51	364	75	279	3317	226	6271	2043	110	4276	477	816	5428	351	938	224	963	2097	163	163	1459	929	804	986	57	61311
	'50																									
	'49																									
	'48																									
	'47																									
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	5	2	3	37	4	54	31	9	82	36	3	10	2	4	4	17	54	3	1	155	11	6	195	1	2207
	Total	613	103	484	4870	338	9641	2883	151	6506	695	1230	8317	583	1430	288	1637	3744	338	278	2640	1383	1115	1568	79	98805
HUDSON	'55	81	20	236	781	42	1329	239	30	918	143	365	1251	135	142	86	195	529	80	34	340	232	91	958	55	20047
	'54	186	53	288	2110	126	4326	447	124	3130	314	419	3333	332	293	151	350	841	162	74	877	670	387	1244	121	42300
	'53	309	119	397	2427	279	5559	712	188	4013	445	884	4443	374	432	220	572	1539	358	93	1170	1084	419	1378	171	59798
	'52	411	143	290	2654	291	5858	780	208	4056	628	1061	4508	298	480	197	715	2124	445	108	1481	1242	454	1245	245	63573
	'51	1050	220	466	4827	507	9737	1515	477	7689	989	1807	8001	440	826	567	1283	3524	981	186	1732	2331	825	3326	371	115687
	'50	726	215	386	4078	441	9555	1347	287	7046	1105	1364	6919	448	639	492	1165	3597	913	177	1922	1839	724	3178	297	109371
	'49	983	218	473	4613	574	10402	1837	499	8940	1346	1801	8129	563	994	700	1759	4810	1274	299	2313	2305	1109	3806	481	133054
	'48	687	173	312	3193	283	7383	1304	214	5554	1089	1162	5470	495	603	295	1085	3026	504	149	1513	1782	791	2005	160	82306
	'47	374	71	206	2038	144	4478	891	90	3206	568	817	3437	335	502	167	640	1672	248	110	839	1340	687	1201	104	51547
	'46	331	76	168	1429	112	3419	737	83	2593	476	759	2988	327	431	126	480	1153	242	95	660	1274	566	1054	83	42803
	'45-'42	76	16	24	162	16	367	114	12	336	84	189	357	36	82	20	59	188	93	15	70	337	66	201	26	7371
	'41	118	40	72	521	33	990	230	28	898	151	503	1016	118	178	35	136	348	119	40	211	833	204	537	58	17907
	'40	70	21	72	434	26	699	191	21	668	122	281	635	78	112	33	99	266	75	33	152	414	136	369	34	12100
	'39	40	12	35	137	11	342	89	9	223	59	94	394	40	56	14	46	109	39	32	80	184	61	165	16	5456
	'38	18	8	12	66	7	189	34	15	112	41	61	185	16	29	6	16	92	25	11	29	119	24	80	7	2797
	'37	48	16	23	149	13	276	53	19	352	53	151	359	20	56	12	32	109	41	24	50	308	76	161	17	5507
	Before '37	65	18	35	143	10	282	53	21	327	77	187	292	23	50	34	31	119	34	20	46	258	56	184	33	5990
	Unid.*	4	5	4	42	2	43	4	2	25	11	3	55	1	3	4	22	83			14	21	1	1	2	4760
	Total	5577	1444	3498	29804	2917	65234	10577	2327	50086	7699	11908	51772	4079	5908	3159	8685	24129	5633	1502	13499	16573	6677	21091	2281	782374

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
KAISER	'55	1	8	2	76	1	13	2	5	9	9	1	37	10	3	7	2	14	1	7	21	14	27	2	.....	1
	'54	41	44	23	681	34	115	11	29	167	81	46	483	222	160	116	50	114	26	127	155	331	162	25	109	48
	'53	267	136	104	3610	177	466	106	72	544	355	129	1610	963	351	528	252	334	124	267	564	2022	612	105	409	128
	'52	341	204	153	3522	188	555	181	103	685	320	175	1802	966	408	478	274	387	159	581	688	1853	628	150	512	154
	'51	1078	691	723	9047	946	1864	595	299	2788	1146	608	8972	4014	2784	2003	1384	1536	513	811	2514	7968	3823	819	2450	470
	'50	141	76	97	1531	143	203	73	35	350	103	65	1056	495	468	297	207	181	107	592	368	587	661	81	382	56
	'49	692	343	467	3936	537	804	188	125	1433	535	356	4313	2108	1972	1074	806	968	360	479	1254	3037	2248	344	1763	283
	'48	673	359	415	4746	605	659	251	153	1329	507	400	4952	2202	2045	1271	961	762	223	772	1469	3590	1946	349	2082	301
	'47	459	255	194	4317	357	561	128	76	907	351	229	1662	909	566	525	594	373	213	279	1063	1351	743	214	936	194
	'46	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'45-'42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Before '37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Unid.*	36	8	13	160	2	6	32	137	88	47	7	169	79	25	9	30	25	6	1409	16	87	21	10	24	1
	Total	3729	2124	2211	31626	2990	5046	1569	1034	8300	3454	2009	25076	11968	8782	6308	4560	4694	1732	5024	8112	20838	10669	1899	8667	1636
LINCOLN	'55	212	102	97	2344	201	295	55	66	619	205	78	1183	437	245	196	104	208	88	133	490	1381	296	95	313	69
	'54	356	225	167	4192	488	610	136	163	1303	429	151	2496	813	425	406	229	371	138	427	903	2232	511	134	531	140
	'53	442	214	173	5084	559	589	106	172	1328	553	203	2678	1039	486	425	245	423	122	486	940	2686	527	188	628	180
	'52	316	172	127	3413	368	461	92	116	951	379	103	1661	648	278	309	167	280	103	321	655	1551	365	131	411	113
	'51	359	162	137	3437	438	526	96	159	1136	459	139	1920	784	395	344	205	296	98	304	801	1574	480	175	567	129
	'50	373	153	107	3330	423	402	92	154	1116	475	104	1590	690	409	318	191	310	114	350	690	1372	385	150	605	109
	'49	720	429	289	7713	890	929	180	291	2391	869	276	3345	1525	800	812	624	725	211	319	1604	2310	948	380	1256	255
	'48	85	46	29	1123	68	135	17	30	252	87	26	307	105	66	71	54	66	26	123	164	172	87	34	97	21
	'47	115	92	47	1991	141	251	35	39	468	148	55	459	192	107	105	113	137	63	75	380	336	147	61	195	28
	'46	70	50	26	1153	86	142	29	19	245	62	32	268	99	78	53	79	83	26	15	265	201	137	45	152	25
	'45-'42	13	32	4	393	22	34	2	4	68	15	4	50	26	11	19	9	32	4	3	69	45	32	11	29	4
	'41	64	59	12	1246	67	119	23	13	150	48	23	123	59	46	41	43	38	25	10	183	81	69	23	107	17
	'40	44	53	15	1185	60	82	13	9	131	32	16	83	45	39	47	27	27	18	16	125	63	45	14	75	22
	'39	27	30	8	759	44	43	13	3	70	28	12	43	34	14	19	22	20	11	12	60	45	36	15	41	21
	'38	12	15	4	457	11	16	8	2	37	7	3	18	10	9	7	8	7	7	6	27	23	28	4	24	4
	'37	13	24	2	470	16	30	2	2	30	9	6	17	14	23	15	9	6	7	4	27	32	23	7	25	10
	Before '37	4	13	1	348	14	27	1	3	32	2	5	21	10	17	6	12	3	7	3	23	14	17	5	16	13
	Unid.*	4	.....	4	102	1	6	30	86	35	31	2	50	7	3	5	4	8	3	919	.....	30	1	.....	.....	.....
	Total	3231	1891	1251	38740	3897	4697	930	1351	10362	3867	1238	16312	6537	3449	3197	2144	3040	1071	3529	7406	14150	4134	1472	5072	1160
MERCURY	'55	2329	822	1159	23846	1890	2579	412	747	4998	3565	649	12841	4859	3056	2167	1690	2240	952	1887	4591	15037	3568	1256	4602	613
	'54	2862	1201	1503	26118	2574	3974	589	1031	6501	4323	1009	16499	5954	3893	3326	2278	3064	936	3492	6375	15967	4343	1545	5180	915
	'53	4286	1467	1699	30176	3192	4291	780	1084	7561	5219	1380	21226	7767	4929	4043	2884	3667	1120	3470	7855	18803	5467	2149	6442	1207
	'52	2175	1170	1010	19941	1921	2566	403	600	4228	2745	952	10805	4189	2601	2562	1701	2015	622	1986	3997	8889	3159	1205	3617	776
	'51	4117	1778	1942	30864	3718	4812	682	955	8004	5437	1325	17808	7247	5258	4406	3244	3713	1191	2244	7325	18275	5940	1961	7303	1290
	'50	4801	1614	1794	29317	3758	4284	651	1032	8156	5796	1103	15858	6186	5309	4291	2839	4061	1063	3059	6892	13743	5849	1996	7726	1092
	'49	4182	1655	1635	27320	3762	3804	515	848	7083	4961	1185	14665	6644	5866	4376	3564	3959	1096	3386	7023	11640	5745	1881	6639	1175
	'48	896	277	343	4906	558	543	82	95	1218	1052	165	2246	1116	631	550	807	805	178	595	1200	1932	782	439	1030	165
	'47	1253	560	548	9050	1015	1100	164	94	1740	1574	338	2765	1451	1005	927	1052	903	342	370	2262	3063	1356	703	1651	325
	'46	1285	415	569	7453	969	937	108	59	1530	1555	318	2367	1237	1070	884	996	820	245	146	1782	2374	1483	709	1670	291
	'45-'42	160	98	98	1512	197	123	30	9	284	236	68	340	212	171	134	155	184	26	15	247	273	334	140	279	57
	'41	706	341	359	6754	603	509	63	28	900	844	237	826	519	576	537	491	500	157	65	905	956	957	397	1073	172
	'40	403	203	171	5194	587	429	61	28	654	548	160	774	399	426	390	336	285	149	81	705	713	742	216	740	120
	'39	254	123	111	2958	279	285	37	14	377	305	86	384	169	282	226	163	169	78	33	327	432	434	126	412	71
	'38	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	'37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Before '37	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Unid.*	43	8	17	1158	22	71	73	444	241	340	18	405	148	63	45	47	49	6	4820	45	256	32	24	20	1
	Total	29748	11732	12956	226267	25045	30087	4750	7068	53475	38490	8993	119809	48097	34938	28844	22247	26434	8161	23829	51531	109333	40171	14749	48384	8270
NASH	'55	429	232	144	4728	526	1018	43	172	862	441	226	3785	1377	657	682	432	339	425	389	2587	2578	796	144	907	170
	'54	630	436	255	6504	796	1764	103	249	1764	763	405	6868	2759	1239	1449	727	623	464	1091	3792	4898	1456	290	1499	358
	'53	1005	519	558	10226	980	2352	248	262	2488	1186	584	10917	4239	1836	1751	1535	847	542	1577	4811	7933	1911	441	3046	427
	'52	1311	700	738	13982	1374	2035	298	434	3086	1489	734	11366	3983	2028	2568	1569	1542	521	1782	4083	7582	2452	739	4155	473
	'51	1963	1299	1176	20341	2463	3083	433	626	4751	2013	1146	15955	7116	3883	3728	2367	1719	891	1585	6091	10662	3924	968	7218	694
	'50	1617	947	917	15944	2330	1931	332	480	3515	1426	890	11350	5730	3352	2805	1757	1216	728	1362	4663	6490	4083	702	5492	626
	'49	1120	759	652	9583	1407	1593	289	323	2609	1136	693	7945	3729	2197	1752	1356	1069	627	1033	3552	4857	2926	674	3371	562
	'48	990	542	495	7555	986	1753	225	271	1929	1119	397	5725	2462	1227	1164	1086	912	518	1045	3533	4783	2032	589	2195	385
	'47	832	447	360	6946	748	1425	205	161	1567	887	364	4297	1780	1029	931	912	717	416	781	2910	3288	1694	461	1769	295
	'46	605	398	310	6057	656	1094	178	116	1010	636	274	3236	1305	839	767	774	555	356	487	2203	2097	1378	349	1544	235
	'45-'42	64	61	21	1278	92	118	20	1	156	71	56	463	163	128	106	86	49	42	31	260	192	245	49	203	47
	'41	106	107	70	3248	236	376	61	13	367	120	136	1020	356	277	215	179	91	113	138	622	477	627	72	568	129
	'40	79	82	41	1772	173	244	26	22	226	79	70	586	240	207	131	123	58	86	62	380	230	383	46	409	81
	'39	45	48	28	1152	103	151	11	7	135	32	36	278	133	105	59	63	31	55	54	271	139	206	28	294	51
	'38	21	27	11	614	73	98	6	6	67	25	23	179	51	81	54	31	14	39	28	140	70	191	22	138	28
	'37	28	49	20	1155	152	165	13	6	107	36	52	306	114	101	75	55	31	62	38	211	167	248	22	168	53
	Before '37	16	59	10	1342	111	124	7	4	68	27	32	191	97	104	78	48	32	50	38	147	84	123	18	127	43
	Unid.*	17	.....	3	28	5	9	95	360	102	95	9	251	48	34	37	19	19	5	3994	10	136	9	13	2	.....
	Total	10778	6703	5809	112457	13216	19333	2593	3513	24811	11561	6127	84718	35682	19324	18352	13119	9864	5940	15475	40248	56061	24864	5627	33105	4687
OLDSMOBILE	'55	3757	1401	2093	29077	2928	4685	781	1613	8991	5586	1211	25183	8984	5006	3985	3336	4542	1171	3049	10897	23790	7492	1949	8236	1228
	'54	3488	1471	1965	30537	3369	5116	887	1734	9014	4697	1218	26990	9901	5372	4718	3321	4499	1032	4231	10798	23074	7217	1941	7330	1488
	'53	3502	1611	1736	28758	3294	5085	1025	1520	8530	4819	1414	22964	9570	5093	4202	3419	3931	1072	3430	10457	20308	6545	1818	6771	1516
	'52	2391	1145	1093	20172	2196	3110	656	1044	5105	3177	901	13023	5781	3016	2783	2424	2615	874	2338	6241	10670	3745	1293	3984	927
	'51	3195	1479	1392	27494	2936	4706	865	1263	6702	4110	1169	16586	7678	4388	3562	3280	3992	1257	2638	9154	12779	5075	1521	5105	1225
	'50	4790	2134	1892	40097	4487	6811	1242	1827	9277	6495	1537	22682	10748	6512	4659	4787	4383	1778	3219	13704	18617	7513	2073	7807	1518
	'49	2914	1457	1167	28456	2889	4974	844	1224	6511	3523	1103	15773	7395	4335	3336	3551	2938	1394	2477	10071	10622	4972	1285	5644	1074
	'48	1478	778	685	15439	1414	2722	500	716	3384	1657	574	9538	4646	2264	2001	2027	1475	852	1301	6226	7973	2594	740	3512	543
	'47	1458	788	658	15674	1575	2972	544	556	3328	1651	566	8578	4483	2328	2023	2116	1315	990	1225	6933	6671	2624	612	3584	533
	'46	740	464	380	8813	964	1640	321	239	1796	899	366	4236	2252	1261	1108	1171	785	534	523	3766	2948	1508	354	2048	289
	'45-'42	186	175	101	3318	238	415	128	41	466	188	111	693	526	261	289	285	200	136	76	820	437	385	106	545	55
	'41	773	724	434	16509	1134	2210	438	199	2148	914	479	3180	1878	1316	1278	1283	693	673	630	4635	2185	1625	407	2580	409
	'40	509	383	283	10189	686	1380	292	95	1354	654	317	2007	1338	804	815	951	440	583	412	3029	1450	1011	276	1743	277
	'39	283	212	118	5694	356	763	136	49	809	318	151	856	574	388	379	414	221	319	239	1552	608	497	140	785	136
	'38	94	116	56	3156	213	303	63	17	269	148	84	450	270	216	175	210	94	161	92	569	260	277	57	395	77
	'37	163	197	90	6045	456	564	87	45	471	210	151	834	589	421	347	343	89	242	157	1007	695	477	66	641	125
	Before '37	98	170	67	6506	363	483	60	32	335	152	117	658	592	391	321	282	95	217	148	752	602	489	60	576	86
	Unid.*	23	3	17	105	10	12	726	706	251	288	18	411	61	28	48	46	46	21	7747	15	334	32	22	5	.....
	Total	29840	14706	14249	295530	29369	47937	9693	12942	68543	39516	11487	174622	77464	43402	38009	33206	31453	13206	33930	100826	142423	54958	14717	61091	11506

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
KAISER	'55	4		2	37		42	9	1	30	2		21		4		7	26	2		10	3	2	8		483
	'54	48	10	30	279	16	683	67	30	645	37	96	529	43	27	42	40	111	31	11	151	123	46	270	13	6758
	'53	187	38	80	965	75	2379	268	86	2155	112	421	2180	137	124	94	246	862	174	45	305	642	137	581	30	26560
	'52	235	46	107	1320	86	2848	503	90	2141	145	566	2861	139	202	86	290	977	199	81	712	781	207	569	27	30685
	'51	1084	154	302	5039	400	10714	2079	502	9241	574	1862	9927	535	628	638	1141	3812	700	264	1161	2941	973	3584	164	117563
	'50	112	14	104	438	65	1240	219	75	1083	335	195	1439	78	53	131	146	375	75	41	959	372	161	467	47	16579
	'49	718	55	173	1686	245	5272	842	407	4274	463	866	4795	262	288	481	672	1579	405	142	834	1197	652	2114	125	58792
	'48	918	93	145	2424	232	5166	916	238	4234	779	986	3813	282	337	513	736	1896	310	108	1049	1093	700	2175	149	62314
	'47	395	65	104	1344	166	2792	570	128	2042	385	612	2117	220	249	229	402	983	155	72	571	838	397	815	53	33171
	'46																									
	'45-'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	9	1	5	67	3	132	4		77	25	10	71	7	3	4	34	129	1		27	40	2	10		3128
	Total	3710	476	1052	13599	1288	31268	5477	1557	25922	2857	5614	27753	1703	1915	2218	3714	10750	2052	764	5779	8030	3277	10593	608	356033
LINCOLN	'55	88	42	52	707	130	1761	251	50	884	181	251	1060	86	114	44	145	986	91	19	222	193	78	314	35	17274
	'54	233	96	117	1352	178	3429	355	103	2105	498	392	2027	160	168	97	327	2013	116	44	482	421	232	627	73	33640
	'53	291	120	100	1310	226	3360	577	126	2312	441	537	2212	127	276	143	367	2141	179	49	528	606	241	567	98	37443
	'52	184	80	77	901	118	2079	403	76	1623	294	354	1424	97	170	94	222	1431	143	34	438	410	178	391	70	24782
	'51	212	83	74	1103	161	2579	508	81	1931	289	378	1832	133	219	120	300	1539	171	35	457	466	187	448	105	28551
	'50	230	97	75	959	138	2194	428	60	1573	376	332	1504	101	221	91	252	1333	131	27	541	426	216	461	81	25859
	'49	413	207	130	2340	322	4859	1005	161	3692	628	843	3620	280	419	284	661	2994	396	73	823	1105	511	1190	171	57218
	'48	32	16	33	289	21	549	68	17	259	174	71	258	34	46	13	63	266	30	8	229	89	35	60	14	5985
	'47	75	38	32	482	40	1124	131	13	501	153	185	533	68	86	29	88	375	57	23	170	220	68	176	23	10472
	'46	46	16	19	277	30	688	99	12	290	100	112	393	39	47	18	66	224	44	12	85	155	51	117	15	6396
	'45-'42	10	2	2	41	11	108	15	1	53	22	36	59	9	14	5	11	73	10		9	48	11	19		1504
	'41	23	26	21	178	18	358	62	6	135	76	101	221	39	37	7	34	138	37	8	57	135	36	72	8	4522
	'40	28	27	16	109	20	190	48	9	94	76	64	131	28	40	4	24	112	31	4	56	108	31	42	8	3586
	'39	14	12	4	54	11	128	31	6	63	44	47	99	14	11	9	20	55	21	10	21	72	18	35	9	2238
	'38	13	3	5	29	2	64	14	1	25	18	21	50	8	9	9	5	27	7	4	14	29	7	21	4	1143
	'37	11	15	1	20	2	66	12	10	47	15	24	55	17	4	4	4	34	7	2	8	41	14	18	4	1258
	Before '37	10	1	6	43	4	59	5	3	45	17	18	38	9	3	3	5	20	5	2	5	19	1	8	1	946
	Unid.*	2	2		20		18	1		15	4	1	32		2	2	7	59			2	10				1508
	Total	1913	883	764	10214	1432	23813	4013	735	15627	3406	3767	15548	1249	1886	976	2601	13840	1476	354	4147	4553	1915	4566	719	264325
MERCURY	'55	1425	255	604	8106	1005	16089	2896	549	10665	2217	2261	11260	719	1203	556	2439	11566	842	299	2882	1504	926	3255	360	186318
	'54	2246	386	707	12783	1032	24687	3191	772	15134	3709	2505	13856	1136	1422	808	2942	14656	838	414	4123	2845	1667	4223	541	242075
	'53	2640	621	770	11496	1519	25985	5621	1026	18321	4120	3092	17834	1197	2520	1150	3750	18048	1418	462	4567	3853	2024	4784	653	289637
	'52	1595	354	460	5807	1005	12552	3097	623	9603	2553	2287	8990	670	1377	660	2047	10053	1062	237	2761	2725	1135	2986	410	160564
	'51	3250	583	762	10847	1708	22852	5966	1151	17954	3784	3715	16783	1233	2507	1558	3784	17175	1699	444	4273	4596	2085	5881	735	282984
	'50	2994	533	715	10555	1681	20902	6363	762	16205	5058	3071	15210	1162	2978	1443	3717	19540	1486	346	4583	4163	1972	5473	716	273870
	'49	2962	542	711	8554	1473	18863	5968	1117	16830	3835	3620	14663	1243	2682	1657	3832	15948	1550	387	4061	4605	2529	5442	645	256128
	'48	419	79	145	1215	200	2705	1054	152	2495	1384	424	2076	237	587	271	783	2664	209	56	1319	588	403	716	110	42863
	'47	730	153	241	2169	309	4532	1709	276	3806	1269	610	3304	373	1088	341	1229	3365	412	103	1294	1236	652	1197	166	66350
	'46	779	118	165	1701	302	3666	1827	326	2931	1132	714	2679	324	1102	416	1206	3276	375	95	1015	1136	624	1226	150	59655
	'45-'42	110	18	30	197	60	413	245	62	293	242	150	341	62	181	78	141	570	73	17	131	211	93	198	34	9332
	'41	408	93	98	709	220	1456	912	205	1132	875	652	1167	186	728	207	562	1850	232	44	459	823	332	753	108	33666
	'40	344	62	95	510	98	1155	589	131	854	493	434	865	125	604	164	343	1015	173	53	341	556	207	582	82	24391
	'39	200	31	44	254	59	651	331	81	392	311	246	477	62	311	85	144	533	78	18	176	305	124	317	35	13380
	'38																									
	'37																									
	Before '37																									
	Unid.*	26	8	11	168	11	246	9	1	189	65	7	190	11	12	9	90	649	3	2	45	59	5	6	4	10222
	Total	20128	3836	5558	75073	10673	156754	39878	7230	116804	31047	23988	109695	8720	19302	9405	27009	120910	10449	2977	32050	29201	14780	37021	4749	1950415
NASH	'55	214	55	379	1618	159	3821	512	128	2152	333	791	2955	344	149	171	461	1266	150	208	791	720	247	2637	62	44392
	'54	512	137	442	3022	255	7639	817	323	4757	631	1109	4976	714	342	314	742	2154	210	307	1346	1426	557	3786	202	77905
	'53	795	184	579	4487	358	10919	1198	425	6979	917	1623	8032	958	539	350	1133	3113	468	425	1207	1994	728	5046	192	114872
	'52	944	268	453	4315	528	11756	1714	403	7837	1545	2128	8301	727	976	425	1650	5832	648	319	1696	2675	906	5500	242	132772
	'51	1622	272	683	6692	891	17099	2746	627	11565	1875	3206	14289	1111	1578	789	2499	7484	993	523	2361	4604	1604	9321	420	200949
	'50	1227	274	512	4729	673	11870	2015	451	8997	2071	2121	10201	799	1134	795	1817	5828	938	291	1879	3338	1181	6850	379	150955
	'49	876	177	428	3489	474	9204	1358	455	6904	1397	1650	7592	624	777	566	1257	3890	733	290	1599	2448	1189	5351	262	108834
	'48	655	87	344	3166	296	8359	1235	297	5916	1014	1175	6833	657	672	305	1219	2932	431	173	1349	1859	924	4190	159	88165
	'47	514	84	265	2649	219	6761	1005	217	4501	874	1059	5018	554	549	276	909	2217	389	123	1151	1540	849	2995	114	70054
	'46	411	72	192	2050	162	5240	742	175	3438	590	915	4084	446	419	233	794	1716	290	115	787	1488	735	2263	95	54911
	'45-'42	63	17	19	183	17	379	45	46	266	89	278	345	53	55	30	70	158	59	6	48	365	86	449	15	7136
	'41	124	34	56	611	60	1162	130	83	882	181	744	1146	150	71	67	168	303	101	22	109	1058	182	1314	31	18493
	'40	91	28	33	472	25	775	85	30	647	120	432	796	65	45	50	114	193	56	20	72	470	137	753	21	11346
	'39	47	15	22	206	10	403	33	31	248	58	205	426	62	22	21	52	83	23	22	30	246	60	404	14	6258
	'38	37	10	20	134	7	282	31	22	153	34	153	262	14	9	24	32	63	21	7	23	127	21	344	4	3871
	'37	54	18	28	193	12	357	26	20	345	39	249	474	39	14	15	43	58	30	13	27	247	32	720	15	6502
	Before '37	55	14	35	174	11	278	24	19	172	40	124	311	37	15	26	35	58	24	16	20	152	47	320	14	5002
	Unid.*	8	2	2	45	6	61	3	2	54	19	9	111	8	5	2	23	134		1	11	32	2	2	1	5843
	Total	8249	1748	4492	38235	4163	96365	13719	3754	65793	11827	17971	76152	7362	7371	4459	13018	37492	5564	2881	14506	24789	9487	52236	2242	1108260
OLDSMOBILE	'55	2013	570	799	12833	1532	33530	5525	988	16430	3754	3815	20637	1655	2428	909	5048	20504	1501	475	4379	3019	1508	8019	615	323252
	'54	2696	566	1021	11994	1377	33460	5118	1199	20502	5524	3559	20393	1617	2537	1327	4166	21982	1208	462	5503	4123	2053	9410	822	338037
	'53	2435	744	888	10567	1381	29472	6077	977	19661	4064	3857	21398	1550	2940	1100	3981	18496	1667	613	4799	4852	1980	7224	808	313905
	'52	1552	441	574	6719	1046	18064	4292	597	12482	2756	2532	12948	982	2166	707	2471	12374	1081	449	3266	3152	1264	4557	528	197900
	'51	2073	499	772	9978	1165	26081	5856	840	16821	3038	3291	16692	1449	2905	1057	3410	13719	1367	547	4471	4768	1750	6743	633	262556
	'50	2886	652	1182	14159	1584	37594	9099	1099	24159	4453	4547	23444	2356	4440	1485	5083	19123	2072	805	6152	7137	2810	9765	785	375258
	'49	1735	439	891	10034	875	26812	4789	672	17986	2751	3214	17057	1843	2513	970	3249	10361	1248	588	4250	5315	2008	7159	478	257326
	'48	1018	199	540	5767	440	16490	2045	373	11000	1543	1641	9658	995	949	559	1762	5161	620	288	2216	2840	1318	4048	255	146787
	'47	1160	186	597	6354	412	16481	2145	327	10623	1566	1813	10108	1119	1054	472	1743	4738	720	350	2170	3090	1429	4008	257	146310
	'46	541	135	349	3626	221	9020	1244	188	5050	875	1107	5301	684	553	289	919	2561	407	185	1142	1913	864	2250	115	78944
	'45-'42	135	42	68	739	54	1860	272	36	871	233	452	1127	176	122	61	174	635	120	48	148	712	190	514	34	18684
	'41	600	183	353	3537	265	7633	1420	184	4412	1091	1832	5525	852	754	279	1016	2462	563	219	1119	3219	1099	2885	175	90413
	'40	357	123	289	2618	161	5532	867	126	2729	761	1058	3771	568	529	202	632	1446	400	152	768	1867	793	1653	82	58733
	'39	211	55	199	1259	76	2992	405	69	1247	352	519	1906	279	237	115	302	655	147	114	411	887	377	777	40	29426
	'38	100	27	80	491	40	1335	184	45	499	188	255	769	106	88	53	107	298	64	46	140	503	165	407	25	13837
	'37	195	75	111	844	78	1981	298	67	1130	328	505	1606	190	128	78	194	528	139	66	258	980	290	764	61	25406
	Before '37	194	64	157	856	37	1808	174	67	1114	281	347	1187	181	113	100	146	415	110	66	200	769	225	739	44	23026
	Unid.*	16	5	8	188	20	187	3	2	113	39	8	522	23	8	6	98	324	1		20	58	4	5	2	12635
	Total	19917	5005	8878	102563	10764	270032	49813	7846	166800	33597	34152	174049	16825	24464	9769	34499	135784	13435	5473	41412	49204	20127	70927	5757	2712417

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
PACKARD	'55	190	168	84	2156	218	461	45	107	511	325	91	1990	724	347	262	222	238	140	261	694	1847	533	126	458	151
	'54	210	209	99	2223	246	663	69	149	806	343	98	2377	720	338	278	241	262	120	554	900	1695	582	77	464	187
	'53	747	394	302	6251	664	1671	205	418	2514	977	304	6308	2924	772	861	752	1089	336	953	2172	5655	1663	381	1555	397
	'52	690	379	270	5097	619	1017	139	337	1941	793	299	3582	1443	748	822	635	890	203	812	1289	2984	1160	411	1372	256
	'51	807	544	394	5097	1035	1768	250	440	2740	1068	398	6605	2408	1287	1185	901	889	324	806	2205	4247	2150	432	1878	402
	'50	653	358	307	5687	813	1176	182	362	1952	789	280	4449	1903	1075	1019	763	800	282	841	1496	2258	1941	293	1470	272
	'49	768	447	463	6446	907	1298	193	371	2246	980	340	5848	2421	1541	1159	1073	792	372	1029	2073	3691	1906	441	2030	411
	'48	535	678	303	9002	781	1513	212	345	1936	716	241	4267	1821	1133	711	773	542	419	686	2227	3527	1196	288	1340	245
	'47	286	209	125	4110	364	728	114	143	879	393	127	1421	651	371	319	373	273	178	313	1149	1324	519	152	676	123
	'45-'42	231	154	97	3078	257	509	79	93	540	249	76	984	469	247	220	292	175	102	235	801	506	414	96	466	70
	'41	204	176	64	4638	286	730	103	82	689	206	79	658	282	195	132	232	168	140	278	963	427	329	58	540	78
	'40	169	193	64	4581	267	862	77	47	625	230	71	728	298	178	148	225	138	130	264	852	418	345	69	513	56
	'39	72	73	27	2368	114	315	37	25	254	85	26	324	111	77	71	103	52	67	164	400	141	164	32	199	16
	'38	35	52	16	1618	77	220	18	15	154	42	22	206	46	70	51	61	38	45	90	221	92	126	9	163	25
	'37	56	105	29	2411	132	476	24	31	243	103	28	377	154	111	73	107	42	103	113	493	262	212	33	226	59
	Before '37	36	53	13	2041	84	259	26	29	138	40	14	184	101	65	38	55	38	51	88	258	134	116	11	122	15
	Unid.*	10	1	1	39	11	3	193	235	75	62	2	105	18	17	11	11	7	3	2562	9	101	13	4		1
	Total	5812	4296	2678	72061	6970	13936	2009	3257	18509	7520	2548	40829	16661	8861	7445	6930	6324	3060	10128	18601	29464	13532	2957	13715	2801
PLYMOUTH	'55	5516	1917	2550	27296	2962	5879	1036	3000	9427	6508	1099	28459	11639	6107	4571	4261	5321	2605	5301	13089	26569	6633	3191	12458	1218
	'54	5088	1823	3156	23988	2818	7125	901	2836	9742	6367	1169	26636	11511	6467	4890	4262	5910	2133	7164	13247	20558	7341	3258	9935	1681
	'53	8481	2795	5330	40996	4809	9908	1389	3419	13348	10096	1976	39767	18872	10256	8201	7264	9088	2954	8391	17456	33931	12700	5524	16437	2244
	'52	4842	1715	2933	27393	3227	4988	847	2603	7521	5888	1425	22312	9839	5938	4825	4298	5462	1813	5699	10746	18790	7439	3079	9203	1407
	'51	7568	2679	4525	39974	5318	8247	1382	3072	12268	8902	1964	36369	16198	10053	7679	7159	7693	2636	6620	16846	26743	12053	4494	15176	2077
	'50	7797	2756	4498	43667	5826	9430	1292	2896	12815	9082	2214	36132	16307	10517	8191	7673	8329	2689	6398	17272	25854	13080	4666	16589	2094
	'49	7426	2729	4039	42139	5772	7931	1301	2406	11831	7648	2144	33868	16342	11138	8042	7676	7348	2583	5617	16649	22958	12595	3860	14406	2104
	'48	5100	1699	2426	27795	3408	4532	840	1380	6554	5910	1254	19733	9378	6346	4853	5218	5203	1745	3383	10379	13149	7252	3051	8883	1172
	'47	4248	1610	2036	25827	3305	4421	783	1079	6195	4656	1228	16534	8845	6232	4588	4849	3938	1622	2701	9671	11294	6770	2400	7518	1161
	'46	2947	1044	1455	16155	2095	3056	444	578	4025	2854	784	10494	5827	3770	2860	3361	2479	1022	1635	6428	6387	4518	1475	5333	676
	'45-'42	848	547	380	8013	615	1086	209	146	1363	1035	300	2251	1714	1061	864	1069	750	321	239	1897	1256	1482	406	1515	235
	'41	3198	1700	1282	31181	2485	5516	709	820	5653	3682	1015	9755	7570	4081	3286	4297	2595	1493	2159	10033	6953	4937	1434	7153	818
	'40	1778	1145	734	23992	1625	3678	475	301	3612	1974	742	6367	4923	2651	2107	2586	1470	990	1741	6205	4114	3873	827	4865	607
	'39	928	690	381	15506	1232	2723	338	196	2239	1164	506	3521	2399	1881	1331	1468	840	656	903	4075	2240	2443	465	3315	386
	'38	421	380	214	8884	584	1119	161	72	1061	557	266	1748	1445	967	793	787	474	355	528	1488	1007	1487	190	1767	209
	'37	629	561	305	13543	1143	1612	191	95	1277	706	452	2486	2111	1335	1238	1214	487	476	563	1789	1880	1958	319	2330	315
	Before '37	653	663	330	20871	1426	1697	184	100	1384	878	905	2749	2724	1588	1523	1294	546	491	674	1489	1828	2283	370	2942	511
	Unid.*	75	16	33	181	22	19	1141	1753	423	645	16	837	127	52	80	134	110	27	18667	61	671	48	67	4	1
	Total	67541	29439	36587	437301	49872	80868	13623	26552	110731	78552	19079	300018	147772	90460	70022	68870	68043	26811	78583	158802	226182	106892	39078	139629	18886
PONTIAC	'55	4795	1523	2138	28768	2894	4949	784	1680	8150	7119	1343	20542	9335	5325	5359	3510	5334	1799	3152	9536	24324	5777	2560	8949	1156
	'54	3511	960	1798	17589	2217	4757	749	1517	6752	5501	848	18461	7819	4309	3904	3348	4486	1373	5169	9219	17782	4344	2105	5684	737
	'53	5048	1814	2743	31139	3572	6183	1203	1790	9468	7727	1341	26462	12273	6632	5163	5067	5862	1724	5027	11807	28416	7859	3058	8320	1261
	'52	3551	1389	1869	22610	2588	3934	771	1094	5936	4924	1125	16171	7801	4050	3644	3290	3977	1079	3040	7319	14641	4926	2073	5282	965
	'51	4679	1831	2216	30899	3651	5486	1077	1480	8151	6440	1418	21975	10874	5922	4807	4834	4847	1514	3538	10115	18607	7026	2448	7378	1329
	'50	5495	2178	3632	39933	4834	6731	1384	1922	10198	7014	1756	27191	12689	7564	5958	5491	5853	1897	4460	12739	21168	9273	2965	9640	1582
	'49	3491	1385	1596	29192	2919	5330	764	1209	5912	4224	1206	17297	8176	4968	3880	3755	3595	1504	2617	9531	12380	5615	1865	6466	1043
	'48	2712	1147	1235	21280	2245	4219	558	721	4335	3090	825	12762	6353	3730	2913	3060	2352	1398	2069	7673	9739	4521	1456	4652	754
	'47	2221	954	1063	16976	2003	4085	570	540	3567	2460	661	10341	5628	3098	2648	3034	1852	1452	1664	7147	8443	3881	1082	3986	477
	'46	1312	598	569	10159	1043	2337	331	291	2006	1338	382	5181	3033	1580	1297	1697	964	881	820	3971	4414	2192	638	2199	252
	'45-'42	411	225	131	4625	366	715	148	46	646	457	172	1061	777	506	448	566	376	245	166	1202	883	627	241	791	117
	'41	1507	917	640	20611	1439	3309	463	265	2514	1469	539	4035	2888	1671	1799	2030	1112	1095	892	5368	3495	2493	756	3111	316
	'40	783	482	413	12746	782	2203	276	157	1490	874	300	2616	1582	1071	938	1163	482	752	700	3132	2104	1505	410	1964	173
	'39	476	227	210	6720	412	1310	172	82	778	471	124	1387	794	706	558	606	319	478	352	1888	946	864	236	1166	70
	'38	198	128	96	3737	198	466	95	26	371	165	75	640	409	345	300	290	127	246	172	651	454	457	91	538	49
	'37	288	196	145	6833	447	939	147	44	610	262	159	1224	913	667	614	462	146	364	236	1156	1050	936	148	917	121
	Before '37	148	141	81	5303	311	518	90	26	353	154	120	648	700	450	397	271	87	230	180	520	570	659	91	858	82
	Unid.*	42	8	23	96	16	16	810	758	261	447	9	561	84	34	62	76	62	15	10430	57	406	31	37	6	1
	Total	40668	16083	19648	300316	31737	57389	10392	13628	71518	54136	12403	188575	92130	52628	44687	42352	41815	18046	44684	103031	169822	62986	22260	71907	10485
STUDEBAKER	'55	764	388	410	7853	647	1214	149	205	1820	1278	480	4335	4183	1340	924	927	1209	471	635	1450	2972	1766	473	1724	426
	'54	596	373	376	8211	520	1142	169	273	2320	1219	394	4014	3679	1237	1013	947	1415	423	1475	1812	2822	1544	426	1419	386
	'53	1718	931	899	18070	1110	2304	499	441	3682	2387	752	9583	8073	2451	1909	2109	2297	694	1952	4454	7820	2862	1069	3238	669
	'52	2235	1088	1275	16121	1444	2315	514	339	3820	2752	1053	9801	6898	2646	2234	2044	2629	664	1742	4187	7153	3864	1554	3471	860
	'51	3288	1604	1714	25242	2406	3660	998	690	5327	3821	1523	14002	11239	4410	3480	3019	3520	950	2101	5863	8976	5545	1953	4962	1229
	'50	4312	2273	2047	36717	3052	4502	1284	924	7244	4441	1881	17952	14623	5188	4315	3618	4955	1331	2531	8619	10971	7751	2180	6544	1627
	'49	1488	824	691	16516	1093	1819	485	358	2821	1595	828	6452	4213	1976	1527	1360	1574	514	1727	3073	3665	2548	702	2379	650
	'48	1835	1296	770	21072	1535	2538	465	508	3380	2003	874	9499	6491	2674	2188	1661	1745	715	1386	4121	5000	3398	890	3411	763
	'47	1428	890	628	15908	1444	1923	339	359	2823	1369	693	6212	5226	2332	1791	1423	1250	509	881	2873	3168	2859	505	2862	557
	'46	163	95	48	3185	155	215	48	29	295	173	79	571	504	211	163	157	137	78	304	319	281	294	77	275	67
	'45-'42	172	116	84	3294	190	242	82	29	285	196	136	990	499	289	188	177	200	55	58	300	238	468	78	356	106
	'41	439	321	173	9371	552	714	157	84	738	426	348	1609	1271	848	485	348	430	142	271	1058	696	1143	156	1041	258
	'40	203	198	97	6395	305	342	92	48	385	240	184	901	723	434	268	184	182	90	180	527	314	663	78	623	159
	'39	63	94	45	4524	170	254	47	31	249	127	115	490	420	260	157	96	60	85	118	312	196	378	34	371	93
	'38	22	37	15	1799	71	95	9	13	84	29	30	191	152	114	74	41	39	22	47	117	63	170	7	107	31
	'37	30	59	28	1957	97	109	20	12	113	56	61	240	252	146	111	62	30	35	37	172	118	228	16	165	49
	Before '37	32	55	17	2638	82	131	19	8	98	50	37	206	268	169	93	56	30	46	69	113	103	238	21	151	59
	Unid.*	43	3	13	56	53	8	248	501	127	179	11	206	83	25	38	36	39	7	5248	19	135	15	30		
	Total	18851	10554	9210	198728	14929	23807	5809	5027	35221	22341	9459	85758	68777	28950	20957	18265	21741	6821	20762	39389	54495	35734	10251	32899	7091
WILLYS	'55	71	81	54	811	451	189	10	18	400	70	196	591	227	90	85	146	107	221	72	324	454	147	44	136	140
	'54	151	166	90	1930	532	288	32	42	647	122	261	826	251	153	138	171	177	195	342	539	605	248	81	217	185
	'53	715	319	315	6085	793	1248	81	152	1889	574	567	2897	1226	542	421	710	506	538	641	1641	2228	834	300	717	425
	'52	783	257	359	4215	637	756	71	121	1527	610	498	1808	879	488	413	599	548	313	510	972	1463	440	313	659	404
	'51	507	195	379	2772	822	740	6	91	1655	378	540	1469	635	294	267	949	594	319	293	1030	893	417	281	646	357
	'50	562	261	385	2639	727	842	24	102	1766	351	377	1654	809	346	264	765	633	263	303	1098	997	392	272	894	276
	'49	597	208	495	2334	761	594	25	60	1272	398	378	1690	754	504	330	885	746	264	302	818	961	407	410	981	241
	'48	1073	247	781	3488	1364	799	19	67	1352	306	751	2824	911	1123	483	1886	1092	346	307	899	1714	959	551	1597	404
	'47	832	188	465	3338	1086	503	20	52	1248	243	516	2004	780	1008	353	1204	827	332	336	771	1608	706	489	1425	382
	'46	524	63	272	3576	707	597	21	18	548	58	231	1514	504	624	247	638	408	226	206	716	1550	539	276	868	188
	'45-'42	399	174	102	3045	266	193	23	4	307	50	195	343	169	131	116	283	194	100	11	246	231	119	173	294	88
	'41	146	66	45	1968	58	66	16	3	154	73	56	140	100	62	50	77	55	23	45	84	111	78	51	99	24
	'40	106	50	28	1363	56	66	8	5	178	59	33	116	119	60	57	63	43	26	15	69	98	68	34	84	22
	'39	25	17	4	668	16	14	4	4	47	11	8	19	25	8	17	14	20	13	5	19	14	28	7	32	3
	'38	20	7	8	457	13	20	2	2	47	8	5	31	34	18	33	16	21	7	11	8	19	30	8	29	6
	'37	17	37	9	1051	52	23	2	1	39	15	8	55	68	20	28	17	10	7	3	23	52	41	9	63	13
	Before '37	17	20	4	917	25	25	2	1	53	12	8	57	44	34	41	39	15	8	6	8	44	83	8	61	19
	Unid.*	34	6	6	15	15	9	19	110	79	38	7	77	29	12	29	31	25	9	1197	17	87	4	25	3	1
	Total	6549	2362	3901	39892	8381	6974	385	853	13206	3376	4649	17719	7557	5517	3372	8173	6021	3210	4805	9282	13129	5550	3332	8805	3159

Unid.*—Unidentified as to model year. Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
PACKARD	'55	136	57	95	1356	115	2570	297	74	1472	180	255	2291	144	137	120	265	836	103	43	423	269	146	562	85	24380
	'54	187	46	95	1797	79	3144	396	87	2063	195	208	3106	115	160	89	343	763	72	63	524	409	319	563	64	28788
	'53	433	206	212	4392	300	9245	1365	228	6129	628	873	7799	415	574	330	900	2879	361	161	1224	1163	863	1582	152	82679
	'52	365	158	147	2598	299	5490	1029	208	3882	586	980	4666	233	466	245	639	2729	359	127	1123	913	623	1114	167	57324
	'51	650	226	219	4078	366	8867	1366	343	6035	651	1301	7200	439	696	524	1101	3258	457	217	1345	1780	855	2089	232	87555
	'50	519	120	173	2675	289	6064	1113	234	4511	696	921	5471	330	444	383	723	2295	380	159	1221	1156	600	1681	173	63532
	'49	676	139	234	3082	324	8155	1342	271	5362	895	1032	6577	319	573	486	930	2626	370	252	1646	1472	800	2061	207	79077
	'48	437	153	252	3051	206	7835	883	119	4446	711	970	6244	328	452	226	713	2215	290	177	1164	1480	668	1489	161	70087
	'47	221	66	115	1410	113	3264	417	52	1877	337	370	2658	157	219	81	369	881	146	82	526	598	337	542	54	30212
	'46	138	53	64	963	82	2076	311	38	1196	258	324	1741	154	176	55	269	628	97	62	370	538	235	387	42	20697
	'45-'42	50	31	14	351	24	667	124	14	420	103	185	725	82	81	28	135	246	50	27	98	320	92	187	18	9577
	'41	87	72	111	924	77	1684	280	15	915	197	400	1799	184	190	20	233	418	110	64	381	740	243	316	44	21243
	'40	114	71	83	1018	52	1791	283	23	826	181	355	1624	134	190	24	240	455	113	77	324	663	236	316	44	20787
	'39	52	25	29	432	28	796	112	6	321	83	137	872	70	95	12	78	176	36	29	181	239	100	139	19	9384
	'38	47	15	24	226	18	540	67	8	207	43	101	383	28	43	12	49	111	46	15	95	169	61	96	13	5932
	'37	75	37	57	447	27	955	128	12	503	92	164	917	114	89	21	83	173	56	39	128	337	108	178	22	10765
	Before '37	39	16	28	306	15	539	47	6	302	51	83	503	52	22	9	26	90	28	22	91	141	51	101	9	6590
	Unid.*	4	2	2	94	1	57	1		44	5	2	147	2	3	5	19	75			10	21	1			3949
	Total	4230	1493	1954	29162	2417	63739	9561	1738	40513	5892	8661	54723	3300	4610	2672	7110	20854	3074	1616	10874	12408	6338	13403	1506	632558
PLYMOUTH	'55	2658	420	1285	16493	1455	36448	8324	1355	20656	3052	3488	32008	2594	3194	1254	6550	18540	1231	887	7280	3520	2788	7159	591	379802
	'54	3029	562	1408	18004	1424	44685	6798	1833	22341	3726	3569	29969	2122	3344	1261	6876	18671	846	1109	7966	5118	4257	7417	655	386996
	'53	5182	940	1888	20575	2530	50440	11215	2717	34495	7132	5624	45275	2824	5471	2744	10140	29384	1904	1356	11094	7915	5296	11451	1194	573302
	'52	3486	578	1140	11474	1538	27878	6704	1695	19904	5235	3885	24603	1577	3150	1561	5469	17798	1340	802	7802	5130	3087	7148	769	337985
	'51	5634	742	1502	19412	2195	45275	10294	2572	32450	6919	5460	40459	2692	5003	2512	8923	26218	1985	1147	11274	7913	5166	12333	1157	526952
	'50	5507	764	1593	19290	2222	46355	10476	2515	33465	7299	6217	40311	2909	4909	2518	9576	28119	2127	1166	11129	8919	5342	12690	1168	543640
	'49	5871	723	1553	18760	2081	45277	9985	2514	34025	6579	6376	39658	2932	4555	2667	8695	25680	2314	1112	10794	8944	5734	12458	1213	521350
	'48	3632	490	1129	10566	1181	25321	5698	1750	20033	4333	3471	23616	1765	2790	1852	5654	15721	1417	710	7317	5530	3684	6891	735	316030
	'47	3643	414	947	10642	1108	24632	5715	1453	19386	3704	3366	21834	1731	2585	1843	5021	13890	1256	626	6333	5134	3723	6616	627	289740
	'46	2178	236	632	6800	726	16233	3875	917	11922	2714	2114	14298	1174	1769	1041	3411	9295	794	392	4022	3186	2536	4297	377	186641
	'45-'42	630	110	140	1925	207	4244	1221	292	3015	652	1104	3595	414	653	272	881	2244	394	86	807	1853	823	1219	109	56492
	'41	2229	449	761	8796	704	18969	5334	851	13929	2568	4265	18000	2077	2748	888	3778	7931	1157	558	4682	6702	3575	5226	356	240138
	'40	1319	304	574	5771	409	12597	2922	513	9109	1723	2918	11337	1288	1606	589	2030	4539	710	372	3325	4396	2340	3818	227	158014
	'39	948	204	378	3524	272	7986	1936	308	5019	1053	1768	7132	978	1150	396	1143	2625	491	231	1668	2723	1333	2391	151	97595
	'38	520	118	172	1584	154	3946	749	184	2233	724	831	3320	306	408	236	497	1628	188	129	886	1438	588	1293	84	49160
	'37	752	187	255	1888	171	4298	1019	213	3959	831	1776	5534	522	607	279	779	1890	367	161	923	2777	1021	1909	140	71273
	Before '37	1061	213	292	1893	239	4081	1172	331	4735	1020	1828	5879	484	690	357	786	2271	437	225	1152	2870	1228	2038	201	85186
	Unid.*	40	14	8	344	14	304	9	12	192	72	21	507	14	27	20	201	729		2	54	114	5	4		27917
	Total	48319	7468	15657	177741	18630	419069	91446	22025	290868	59336	58079	367335	28403	44659	22290	80410	227153	18958	11051	98508	94182	52526	106358	9754	4848213
PONTIAC	'55	2068	475	1038	13251	1896	30522	6394	756	18290	3644	3903	20967	1495	2961	810	5213	21615	1471	589	4913	3210	1817	6805	598	325402
	'54	2194	333	1320	12712	1165	30688	5141	651	18962	4319	1844	18473	1348	2438	821	4028	16447	742	577	6263	2593	2335	6546	537	277596
	'53	3300	715	1358	16634	1780	38860	8331	1300	26602	4857	3723	25479	1786	3797	1227	6077	20573	1565	790	6645	4645	3195	8739	824	393761
	'52	2199	471	846	10123	1257	22108	5687	911	16564	3563	2806	15486	1071	2585	859	4174	14518	1291	473	4420	3525	1983	5201	624	250783
	'51	3263	614	1069	14266	1589	30649	7246	1273	23751	4281	3910	21829	1577	3309	1345	5549	18052	1851	658	5735	5250	2694	7875	769	341181
	'50	3878	747	1375	16864	1612	37032	8848	1376	27928	5732	4891	26221	2037	3772	1712	6768	21750	2292	848	7574	6881	3366	9061	894	416930
	'49	2487	450	1024	13457	1029	29755	5334	963	18393	3572	3269	17239	1542	2343	1121	4132	11772	1569	664	4743	4713	2335	6580	535	279984
	'48	2085	350	830	9560	724	21291	4274	763	15291	2660	2498	13558	1213	2183	871	3559	8357	1147	537	3572	3626	1897	4989	376	212010
	'47	1690	306	804	8908	637	18722	4183	547	13487	2501	2523	12408	1235	1929	830	2785	6997	961	574	3232	3492	1933	4436	290	185223
	'46	903	160	446	5017	309	10520	2417	311	7083	1270	1475	6420	708	1185	417	1591	3548	503	295	1789	2152	1199	2474	156	101833
	'45-'42	281	68	128	1168	118	2165	772	92	1451	450	683	1595	240	465	126	478	1097	190	64	363	999	427	833	64	30335
	'41	988	257	476	5356	341	10089	2922	272	6201	1778	2726	7286	1140	1668	342	1630	3452	779	297	1933	3584	1412	3256	984	123103
	'40	533	152	340	3788	193	6704	1618	131	3649	1025	1592	4597	627	731	170	869	1647	420	237	1177	2006	975	2013	96	74368
	'39	326	69	203	2093	88	4092	765	90	1961	607	668	2381	411	409	115	464	845	155	126	682	947	456	1102	41	40450
	'38	171	33	84	777	37	1824	327	38	870	288	367	1017	128	150	71	165	477	69	61	242	458	196	527	21	18722
	'37	324	74	176	1261	71	2421	417	71	1890	491	754	2218	205	248	135	259	593	210	121	368	1024	334	1208	58	34055
	Before '37	266	51	108	793	37	1295	224	72	1048	401	363	1115	144	144	83	165	495	82	61	242	484	179	725	45	21410
	Unid.*	21	9	13	186	11	178	10	2	122	73	12	280	8	13	10	113	482		1	32	86	3	3	2	16040
	Total	27087	5334	11658	136208	13094	299145	64910	9619	204538	41517	38029	198589	16909	30330	11065	47999	152717	15288	6974	53925	49675	26933	73216	6101	3143186
STUDEBAKER	'55	461	307	236	2770	413	4964	1153	227	3251	531	1051	4186	454	516	241	967	3668	202	163	1028	833	480	1441	110	67456
	'54	575	294	380	2518	276	5780	964	220	3542	916	952	3563	399	359	299	790	3189	130	183	1684	1208	585	1506	98	68615
	'53	1260	408	457	5405	752	12050	2495	517	8892	1619	1665	8990	879	1125	576	2009	7003	549	241	2479	2241	957	3406	249	145998
	'52	1526	408	448	5408	991	12388	3178	710	9279	2037	2067	9879	717	1443	716	2472	9314	819	287	2907	2879	1194	3945	322	158594
	'51	2445	446	668	7732	1380	17047	4542	896	13533	2570	3384	13941	991	2075	1106	3474	12809	1355	376	3822	4874	1728	5994	442	229145
	'50	2884	615	872	10602	1863	22291	5335	1114	16988	3619	3953	17961	1556	2458	1312	4669	17560	2036	494	4691	6059	2005	7512	588	299939
	'49	1016	256	354	4095	586	9292	1897	483	6147	1656	1788	7622	612	877	510	1605	5272	842	258	2835	2851	979	2890	295	115678
	'48	1484	364	452	5027	657	11890	2559	545	8331	1621	2650	10414	872	1104	640	1899	6502	1032	312	2374	3826	1295	3409	311	148790
	'47	1344	205	297	3851	526	8654	1929	448	5808	1480	1999	7254	671	860	556	1411	5269	691	182	1649	2833	1022	2666	279	111568
	'46	157	23	32	462	52	915	189	48	554	288	271	804	67	118	53	158	526	60	22	379	363	133	245	31	13893
	'45-'42	162	42	24	328	41	637	201	59	489	146	489	693	79	92	56	147	514	129	18	138	723	139	347	30	14133
	'41	454	109	76	1001	126	1976	548	137	1455	412	1215	2170	241	275	171	445	1265	366	45	526	1832	441	1059	110	39538
	'40	223	61	40	646	71	1025	294	64	862	250	592	1329	124	191	105	206	678	194	29	301	906	279	582	58	22827
	'39	158	49	34	320	41	679	139	44	588	148	372	960	91	90	44	112	391	135	23	151	615	154	385	25	14539
	'38	58	20	16	122	11	274	33	12	192	65	150	390	25	12	16	35	144	48	12	76	214	61	121	10	5495
	'37	86	21	28	225	13	369	40	23	382	65	234	670	51	15	22	53	210	67	10	83	359	95	220	11	7585
	Before '37	102	28	27	209	17	333	30	26	262	85	167	390	34	37	32	32	207	48	12	82	394	44	195	23	7517
	Unid.*	11	4	5	116	2	104	4	2	57	28	9	139	1	3	21	46	240			15	54		2	1	7989
	Total	14406	3660	4446	50837	7620	110668	25530	5575	80592	17538	22989	91375	7864	11650	6476	20532	74761	8703	2667	25190	32974	11591	35927	2983	1479289
WILLYS	'55	54	74	113	308	170	866	114	31	693	21	345	892	32	33	47	100	357	109	146	182	199	156	194	218	10589
	'54	116	71	139	552	160	1644	181	43	867	50	531	1030	55	68	105	160	538	182	190	325	342	184	422	199	16545
	'53	315	180	364	2291	361	6156	1166	123	3667	176	1117	3365	180	407	178	653	1365	321	455	725	879	677	922	329	51558
	'52	334	130	216	1588	291	3915	1174	119	2579	240	1114	2744	141	359	165	542	1582	345	305	822	782	608	675	249	40412
	'51	273	99	205	1388	327	3172	423	160	1973	56	1088	2292	140	178	138	527	1472	219	410	513	724	472	441	347	33246
	'50	210	96	205	1473	358	3350	519	122	1935	122	732	3076	178	233	101	666	1789	200	311	631	702	607	460	253	35531
	'49	301	56	137	1327	296	2658	548	143	1904	176	584	1784	135	262	107	786	1896	187	197	666	609	600	434	235	32443
	'48	543	66	184	1069	421	2809	423	431	2664	167	1256	2630	141	191	101	1132	2549	380	373	1088	885	335	663	395	46239
	'47	418	69	161	882	398	2082	281	309	2163	110	959	2050	123	127	68	836	1899	266	330	897	831	292	532	315	37116
	'46	251	61	136	802	261	1626	78	184	1770	64	644	2053	102	28	11	401	1036	148	323	644	444	58	257	137	26816
	'45-'42	79	60	55	316	184	746	31	42	429	62	557	230	60	16	17	263	484	232	68	280	940	32	88	59	12584
	'41	39	20	14	121	28	250	83	34	211	56	204	562	44	53	19	59	149	34	5	67	223	44	105	12	6068
	'40	19	7	13	128	9	173	56	12	269	47	158	279	21	34	24	70	150	19	7	37	152	41	65	5	4845
	'39	8	3	4	26	4	64	24	5	42	29	45	28	2	14	11	14	41	2		9	27	13	21	3	1488
	'38	15	1	5	23	6	45	10	10	38	15	25	33	2	12	6	6	45	5	5	6	20	6	22		1223
	'37	18	11	8	34	7	84	23	6	140	30	53	74	3	12	6	12	49	7	4	19	63	21	49	7	2400
	Before '37	44	5	9	44	7	78	12	18	108	17	65	89	8	11	8	17	40	4	16	14	83	14	72		2314
	Unid.*	10	2	2	29	1	79	6	2	27	7	11	124	1	2	1	41	54		3	6	14	4	3	3	2307
	Total	3047	1011	1970	12403	3289	29797	5152	1794	21479	1445	9468	23335	1368	2038	1113	6287	15495	2680	3148	6831	7899	4184	5423	2766	363342

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Cars in Use by Makes, by Model Year, see page 116

• TOTAL REGISTRATIONS •

CARS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
ALL OTHERS	'55	158	157	49	9605	201	1053	63	168	1116	324	53	865	427	169	163	83	264	158	210	1393	775	221	48	207	50
	'54	175	149	66	9105	261	944	66	229	909	352	68	2666	317	118	152	137	264	72	321	1045	717	166	73	266	35
	'53	233	196	80	12167	293	1058	97	215	1489	450	93	1196	524	128	160	194	285	113	306	1272	911	385	104	317	44
	'52	242	249	79	10721	382	1034	133	193	1482	414	114	1115	455	125	181	205	336	102	280	1287	744	187	105	409	46
	'51	334	270	113	7456	334	1180	132	238	1808	586	99	1846	505	127	226	231	317	124	219	1414	861	202	146	403	43
	'50	199	143	96	4318	280	827	89	160	1590	533	96	886	407	117	133	197	316	91	136	921	576	192	128	342	42
	'49	176	109	93	2379	189	468	35	64	824	430	77	771	464	176	255	185	358	86	120	630	587	160	136	373	36
	'48	289	182	125	3839	227	950	73	121	1098	466	123	1324	688	330	358	391	370	159	158	939	1017	421	195	820	55
	'47	123	80	54	1287	126	212	49	21	633	246	34	328	294	97	113	203	129	48	65	232	351	107	82	247	31
	'46	66	9	24	261	57	63	12	1	165	117	9	127	78	29	25	40	56	17	7	67	103	20	43	48	1
	'45-'42	41	13	10	183	23	38	10	2	93	48	2	41	50	12	6	24	22	14	4	44	40	39	14	22	3
	'41	29	20	15	294	47	60	7	7	114	93	16	104	63	21	29	33	20	11	15	72	78	59	29	25	3
	'40	22	16	13	263	38	57	6	6	116	88	18	86	57	37	22	31	20	21	7	84	74	36	19	25	2
	'39	10	13	4	294	35	58	11	2	121	54	9	65	53	29	12	21	11	18	18	45	72	45	19	24	4
	'38	9	11	.....	245	18	30	8	1	55	30	6	52	29	13	9	10	5	7	5	30	40	35	2	25	3
	'37	9	13	6	381	37	80	7	6	72	28	11	99	58	44	41	33	10	11	16	62	67	47	12	14	13
Before '37		44	74	22	1953	184	348	31	18	249	110	38	363	208	352	133	99	32	70	69	245	266	334	47	194	55
Unid.*		125	37	63	203	211	99	157	259	292	116	26	611	231	191	19	1613	329	148	2100	231	383	26	202	10	19
Total		2294	1740	934	63956	2923	8557	988	1711	12226	4487	892	12545	5108	2115	2041	3730	3144	1270	4056	10013	7664	2682	1395	3771	485
U.S. Total		709147	277742	342960	4821003	529127	7441195	141312	191878	1161958	864316	210293	2797992	1392868	885273	726805	985489	666655	240075	656862	1367631	2447118	1041685	380549	1229044	199852

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

Passenger Cars in Use by Makes and by Model Year

As of July 1, 1955

Based on data from the Reuben H. Donnelley Corp.

Model Year	Buick	Cadillac	Chevrolet	Chrysler	De Soto	Dodge	Ford	Hudson	Kaiser-Frazer-Henry J	Lincoln	Mercury	Nash	Oldsmobile	Packard	Plymouth	Pontiac	Studebaker	Willys	All Others	Total
1955	414,941	88,053	975,703	93,508	68,467	160,167	907,793	20,047	483	17,274	188,318	44,392	323,252	24,380	370,802	325,402	67,456	10,589	27,521	4,135,548
1954	423,826	88,531	1,110,913	94,032	71,536	152,303	1,097,597	42,300	7,829	33,640	242,075	77,905	338,037	26,788	386,996	277,596	66,615	16,545	30,178	4,589,042
1953	456,016	98,933	1,292,010	153,764	121,811	290,068	1,169,518	59,796	39,457	37,443	269,637	114,872	313,905	82,679	573,302	393,761	145,998	51,558	38,909	5,723,459
1952	282,874	81,894	794,004	87,228	80,103	212,402	627,549	63,573	50,204	24,782	160,584	132,772	197,900	57,324	337,985	250,783	156,594	40,412	34,026	3,674,973
1951	372,980	97,533	1,168,577	133,638	93,602	252,809	936,998	115,687	187,523	28,551	262,964	200,949	262,556	87,555	526,952	341,161	229,145	33,246	34,106	5,386,532
1950	613,489	94,482	1,311,103	161,801	123,561	322,004	1,137,285	109,371	18,268	25,859	273,879	150,955	375,258	63,532	543,640	416,930	299,939	35,531	25,575	6,102,453
1949	290,643	82,907	963,215	129,461	100,998	274,301	975,282	133,054	76,686	57,218	256,128	196,834	257,326	79,077	521,350	279,964	115,678	32,443	17,939	4,772,516
1948	183,101	46,259	663,184	97,205	74,924	195,613	220,232	82,306	96,571	5,985	42,863	88,165	146,787	70,087	316,030	212,010	148,790	46,239	29,603	2,765,944
1947	198,678	49,718	599,570	82,236	62,752	194,842	342,432	51,547	68,932	10,472	66,350	70,054	146,310	30,212	289,740	185,223	111,568	37,116	9,827	2,607,579
1946	103,595	22,256	338,755	55,351	46,201	122,844	340,401	42,803	.....	6,396	58,655	54,911	78,944	20,697	186,641	101,833	13,893	26,616	3,025	1,623,817
'45-'42	27,954	8,821	127,668	11,825	8,406	28,852	81,344	7,371	.....	1,504	9,332	7,136	18,864	9,577	56,492	30,335	14,133	12,584	1,795	463,793
1941	132,167	36,233	537,621	63,405	37,978	93,978	282,773	17,907	.....	4,522	33,666	18,493	90,413	21,243	240,138	123,103	39,538	6,086	2,659	1,781,923
1940	97,055	14,382	357,132	33,229	24,225	77,999	207,574	12,100	.....	3,586	24,391	11,346	58,733	20,787	158,014	74,368	22,827	4,645	2,295	1,204,688
1939	47,593	9,621	221,074	17,868	14,367	48,735	111,267	5,456	.....	2,238	13,380	6,258	29,428	9,384	97,595	40,450	14,539	1,488	1,985	692,726
1938	29,937	4,376	122,110	8,935	6,894	22,304	45,653	2,797	.....	1,143	.....	3,871	13,837	5,932	49,160	18,722	5,495	1,223	1,228	343,653
1937	32,744	5,649	144,546	10,986	9,333	41,122	69,695	5,507	.....	1,258	.....	6,502	25,406	10,765	71,273	34,055	7,585	2,400	2,250	481,078
Earlier	25,090	3,927	170,380	9,990	6,318	46,194	343,496	5,990	.....	946	.....	5,002	23,026	6,590	85,186	21,410	7,517	2,314	9,792	773,168
Unid.*	17,257	3,758	53,552	6,236	4,258	13,591	38,779	4,760	6,874	1,508	10,222	5,843	12,635	3,949	27,917	16,040	7,989	2,307	17,603	255,080
Total	3,749,956	837,333	10,971,117	1,250,700	955,724	2,550,148	8,935,868	782,374	552,629	264,325	1,950,415	1,108,260	2,712,417	632,558	4,848,213	3,143,188	1,479,289	363,342	290,316	47,377,970

Unid.*—Unidentified as to model year.

Passenger Cars in Use by Makes

Arranged in Descending Order, as of July 1, 1955 Totals

Based on Data from The Reuben H. Donnelley Corp.

Rank	Make	Number in Use	% of Total	Rank	Make	Number in Use	% of Total
1	Chevrolet	10,971,117	23.16	12	De Soto	955,724	2.02
2	Ford	8,935,868	18.86	13	Cadillac	837,333	1.77
3	Plymouth	4,848,213	10.23	14	Hudson	782,374	1.65
4	Buick	3,749,956	7.91	15	Packard	632,558	1.34
5	Pontiac	3,143,186	6.63	16	Willys	363,342	.77
6	Oldsmobile	2,712,417	5.73	17	Kaiser	356,033	.75
7	Dodge	2,550,148	5.38	18	Lincoln	264,325	.56
8	Mercury	1,950,415	4.12	19	Frazer	99,791	.21
9	Studebaker	1,479,289	3.12	20	Henry J	96,805	.20
10	Chrysler	1,250,700	2.64	—	All Others	290,316	.61
11	Nash	1,108,260	2.34		Total	47,377,970	100.00

AND MODEL YEAR—*concluded*

ALL OTHERS

Model Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N.D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
'55	85	86	135	1575	124	3101	169	10	905	115	400	829	239	79	37	179	1152	64	59	405	481	112	267	33	27521
'54	58	108	111	1194	147	3820	200	20	926	147	358	707	213	147	81	243	1309	41	70	515	661	81	320	30	30178
'53	67	142	123	1542	170	7308	283	21	1247	149	549	353	233	198	39	343	1698	64	60	584	954	98	329	45	38909
'52	76	109	129	1439	192	3695	361	28	1184	204	660	394	233	291	42	399	1696	86	79	686	964	129	278	52	34026
'51	73	72	107	1566	199	4414	499	12	1189	168	705	465	199	419	33	502	1832	65	72	725	1119	165	281	37	34106
'50	74	34	79	1209	164	3581	458	35	1076	126	517	508	180	239	30	456	1881	47	65	515	1054	211	160	39	25575
'49	53	19	68	934	146	2037	243	18	856	153	254	417	125	176	40	306	1579	39	62	349	456	151	233	23	17939
'48	146	35	102	1667	145	3422	505	42	1567	220	430	916	208	303	61	443	2309	67	65	685	783	240	281	43	29603
'47	55	9	23	507	51	720	182	24	616	89	117	327	48	121	34	185	845	13	18	216	211	107	91	26	9827
'46	10	5	6	164	27	217	51	9	126	46	38	129	24	39	8	99	352	5	7	93	62	27	25	12	3025
'45-'42	10	2	3	122	13	118	37	1	55	17	22	53	14	15	2	92	209	8	3	75	80	11	25	8	1795
'41	13	10	6	102	22	162	40	6	154	17	44	118	25	28	9	70	304	5	4	48	151	18	32	8	2659
'40	21	4	11	108	7	185	28	14	127	22	31	112	12	17	2	56	212	2	4	30	74	20	23	7	2295
'39	6	1	11	95	6	187	27	10	122	19	30	106	17	8	1	28	122	4	7	34	81	9	20	4	1985
'38	4	6	9	46	6	107	16	5	65	17	23	51	11	6	4	9	70	2	3	26	39	12	9	4	1228
'37	19	8	17	93	6	167	24	6	158	9	41	167	11	10	12	15	84	9	5	35	105	16	30	6	2250
Before '37	107	24	43	407	33	643	57	42	857	153	160	632	83	46	70	75	288	29	30	94	298	74	188	31	9792
Unid.*	171	18	72	299	45	554	169	5	866	75	133	6091	18	17	7	273	874	2	10	19	297	15	54	16	17603
Total	1046	692	1055	13069	1503	34438	3349	306	11596	1748	4510	12377	1893	2159	511	3775	16813	572	623	5134	7872	1498	2636	424	290316
U.S. Total	474063	60633	153852	1685051	212077	3864225	1099886	192328	2806334	671779	604896	2991552	244297	534602	212824	764412	2529563	221673	100561	857197	824716	430945	1106582	108224	47377878

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

600,000 Fewer Farms Show Increased Mechanization

Cars, Trucks, Tractors on Farms, 1954-1950

As reported by the Bureau of the Census

State	Passenger Cars 1954	Passenger Cars 1950	% Change	Trucks 1954	Trucks 1950	% Change	Tractors: Wheel	Tractors: Track	Tractors: Garden	Tractors: Total 1954	Tractors: Total 1950	% Change
Alabama	83,374	71,276	16.97	65,360	52,801	23.79	61,548	978	2,649	65,175	45,872	42.09
Arizona	15,197	11,775	29.06	13,579	8,611	57.69	11,459	2,046	377	13,882	9,748	42.41
Arkansas	66,317	65,197	1.72	77,394	63,589	21.71	78,629	1,189	3,351	83,169	60,417	37.66
California	172,759	172,148	0.35	129,324	110,724	16.80	94,521	42,260	12,602	149,383	124,963	19.54
Colorado	47,000	48,842	—3.77	45,643	42,663	14.02	56,100	3,526	2,283	61,909	53,187	16.40
Connecticut	17,459	18,439	—5.32	13,393	13,198	1.48	10,663	623	2,879	14,165	11,949	18.54
Delaware	7,055	7,063	—0.11	5,191	4,059	27.89	7,668	158	1,078	8,904	6,130	45.25
Dist. of Columbia	No Farms			No Farms						No Farms		
Florida	46,652	36,123	29.14	37,209	29,267	27.14	29,848	2,031	2,942	34,821	22,132	57.33
Georgia	111,026	100,586	10.38	77,483	63,022	22.94	83,847	1,263	3,008	88,118	60,576	45.47
Idaho	43,091	39,980	7.78	38,790	29,690	30.65	42,059	7,709	3,132	52,900	39,397	34.27
Illinois	190,121	196,183	—3.09	100,396	86,789	15.68	262,233	3,549	24,263	290,045	234,893	23.48
Indiana	162,489	159,273	2.02	78,066	59,816	30.51	173,700	2,336	30,319	206,355	154,135	33.88
Iowa	225,497	228,541	—1.33	84,678	62,612	35.24	294,821	2,239	14,662	311,722	241,090	29.30
Kansas	129,342	133,421	—3.06	112,441	89,254	25.98	165,337	3,134	7,848	176,319	146,498	20.35
Kentucky	122,152	119,881	1.89	68,013	55,032	23.59	82,880	1,003	4,787	88,670	59,193	49.80
Louisiana	62,789	56,515	11.10	48,644	36,445	33.47	48,973	1,075	1,928	51,976	36,059	44.14
Maine	21,792	23,937	—8.96	18,287	19,197	—4.74	16,084	716	2,138	18,938	16,675	13.57
Maryland	38,077	36,446	4.47	22,275	21,428	3.95	34,842	927	4,899	40,668	29,885	36.08
Massachusetts	20,011	21,457	—6.74	14,411	15,385	—6.33	12,064	632	3,580	16,276	14,720	10.57
Michigan	156,949	164,763	—4.75	71,115	56,976	24.82	163,195	3,609	20,698	187,502	149,372	25.53
Minnesota	191,441	195,959	—2.31	90,260	70,528	27.98	245,045	4,297	6,084	255,426	204,361	24.99
Mississippi	98,852	76,250	29.64	77,605	56,249	37.97	78,183	1,467	1,971	81,621	51,923	57.20
Missouri	161,141	162,558	—0.87	95,935	77,464	23.84	165,939	2,562	14,677	183,178	125,864	45.54
Montana	38,233	35,077	9.00	48,520	38,772	25.14	49,122	5,053	3,019	57,194	44,991	27.12
Nebraska	121,110	121,220	—0.09	72,175	54,398	32.68	157,638	2,372	3,314	163,324	127,352	28.25
Nevada	3,459	3,066	14.12	3,907	3,123	25.10	3,802	560	232	4,594	3,213	42.98
New Hampshire	10,183	12,073	—15.65	8,390	8,853	—5.23	6,266	364	1,525	8,155	6,951	17.32
New Jersey	28,736	27,976	2.72	24,350	24,279	0.29	24,063	1,009	5,093	30,165	26,181	15.21
New Mexico	16,055	15,110	6.25	19,906	15,098	31.85	16,282	533	642	17,457	15,871	10.00
New York	122,941	129,972	—5.41	71,020	72,463	—2.00	124,041	5,655	14,749	144,445	119,706	20.67
North Carolina	182,323	160,067	13.90	86,290	60,406	42.85	118,670	1,487	5,308	125,465	73,534	70.62
North Dakota	72,315	73,707	—1.89	66,791	55,640	20.04	110,167	2,335	2,034	114,536	98,672	16.08
Ohio	197,056	208,087	—5.30	77,864	64,765	20.22	194,962	3,344	34,782	233,088	182,571	27.67
Oklahoma	89,578	95,224	—5.93	86,480	68,895	25.52	100,783	1,254	4,463	106,500	93,804	13.53
Oregon	61,069	61,907	—1.35	48,325	39,461	22.46	43,371	10,852	12,917	67,140	52,514	27.85
Pennsylvania	144,554	151,763	—4.75	72,066	66,113	9.00	132,035	5,446	21,720	159,201	125,907	26.44
Rhode Island	2,301	2,773	—17.02	1,904	2,445	—22.13	1,172	84	384	1,640	1,939	—15.42
South Carolina	89,135	81,579	9.26	40,374	29,757	35.68	43,996	725	1,820	46,551	30,229	53.49
South Dakota	74,075	77,319	—4.20	47,720	37,796	26.26	107,740	1,453	2,235	111,428	88,611	25.85
Tennessee	118,701	113,774	4.33	72,999	60,223	21.21	83,366	1,514	5,162	90,042	59,803	50.56
Texas	250,679	254,860	—1.64	189,736	147,101	28.98	264,319	4,193	8,381	276,893	233,081	18.80
Utah	23,343	20,773	12.37	18,130	15,352	18.10	18,019	1,419	1,622	21,060	15,997	31.65
Vermont	16,754	16,580	1.05	11,177	10,595	5.49	13,318	858	1,243	15,419	10,655	44.71
Virginia	100,709	94,036	7.10	58,923	49,087	20.04	62,994	1,734	12,817	77,545	48,256	60.69
Washington	74,440	69,571	7.00	56,227	48,245	16.54	43,588	13,450	13,556	70,594	55,055	28.22
West Virginia	36,559	37,271	—1.91	27,001	24,631	9.62	17,457	705	6,545	24,707	13,935	77.30
Wisconsin	179,560	183,108	—1.94	87,337	74,474	17.27	210,951	2,932	10,652	224,535	171,623	30.83
Wyoming	13,984	12,912	8.30	15,103	12,600	19.86	17,488	1,212	622	19,322	15,606	23.81
Total	4,258,475	4,206,418	1.24	2,701,207	2,209,371	22.26	4,185,248	159,872	347,002	4,629,122	3,615,126	29.79

— = Decrease; all others show increase.

• TOTAL REGISTRATIONS •

TRUCKS IN USE BY MAKES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
AUTOCAR	'55																									
	'54	4	7	1	81	15	19	3	7	11	2	4	20	21	3		1	1	3	13	92	20	3		3	3
	'53	17	2	2	115	32	23	17	1	21	7	2	31	20	2	2		2	6	20	102	40		1	14	1
	'52	8	5		117	6	15	12	10	33	4	3	25	24	2	1	6	5	7	44	113	22	2	1	18	
	'51	11	15	1	213	8	38	14	9	17	3	1	76	18	2		7	8	13	26	194	36	1	3	9	1
	'50	9	3		174	12	21	14	11	24	2	1	32	33	2		4	3	8	16	236	14	8	1	9	
	'49	3	2	1	85	2	22	18	32	4		2	66	11	2	3	2	1	5	30	163	13	5		15	4
	'48	10	3	1	176	12	62	23	15	10	3	2	101	17	1	3	13	6	4	36	204	36	16		9	3
	'47	4	3	1	307	32	105	21	20	18	4	9	163	24	2	3	10	3	15	57	334	53	35	1	27	6
	'46	11	7	1	366	32	105	34	17	52	3	7	82	21	3	7	4	10	6	53	412	24	13		64	4
	'45	4	2		224	11	37	7	9	26	3	4	62	13	3	2	4	1	4	18	189	10	27		19	3
	'44	5	14		152	3	18	6	4	4	2	1	9	2			2	3		25	76	4	6		9	
	'43		6		35	1	2	1	1	2	2		6			2	1			1	5	1	1			
	'42	2	16		105	8	11	6	21	26	3	6	16	3	3	7	1	10	1	8	48	3	3		4	2
	'41	3	9		212	2	44	3	21	9	2	4	39	1		1	1	2		19	116	2	4	2	31	1
	'40		5		92		17	5	19	2	2		21		1	1		1	1	9	67	4	1		3	
	'39				55		15	5	3	2		1	18	1	3		1		1	23	36				3	1
	'38				44	2	15	1	3				9	1	2					1	34		6		3	
	'37		1		51		4	1					18	1					2	3	24		7		1	
	Before '37				100		26	2	4	1		2	27	1	1	1	2		4	5	63		1		8	
	Unid.*		2			14	7	27	6	6	3	2	8	8		1	3	1	3	137	16	8			2	
	Total	91	102	8	2706	192	606	220	213	268	45	51	829	220	32	34	62	57	83	544	2524	290	139	9	251	29
BROCKWAY	'55	2					5		2	2									2	14	37					
	'54						25		4	4				1					2	29	65		1			
	'53	3			3		34		1					3					10	72	89	1				
	'52	1			3		23	1	6	1							1		6	49	91	1				
	'51	2	2		4		36	3	2	6	1		1	4					15	67	110	2				
	'50	3			6		38	7	6	3			4	3				1	20	52	179		1			
	'49	3			1	1	21	2	1	2			6	6			2		9	47	110	2				
	'48	4			11	1	48	9	16	5			4	4		4			16	63	202	11			3	1
	'47	4	2		11		86	11	10	2			7	16	1	1	1	2	23	56	232	11	2	1	3	
	'46	6	1		15		56		8	4	1		4	28			3		17	55	224	14	1		1	
	'45		1		9		25		8	2			13	7	1				2	29	131	1	1			
	'44				8		4		2					1				1	5	14	53			1		
	'43				1			1	1	1						3		2	1		2		1			
	'42				5		7						1						3	1	5					
	'41	2	2		9		42	1	5	2			3	1					4	17	69					
	'40	1			1		17		5	1				1					4	10	24					
	'39				5		24													3	25					
	'38			1	5		14			1					1					3	16					
	'37				6	1	9			1			1							2	13					
	Before '37				6		13	1	3	2				1			1	1	3	3	21					
	Unid.*							2												128	3	1				
	Total	31	8	1	109	3	527	38	82	39	2		44	75	4	8	8	7	142	714	1701	44	7	2	7	1
CHEVROLET	'55	3889	1630	4290	14919	2318	1806	908	482	5521	4635	1092	9827	5281	3153	3064	3271	3967	1424	1809	2732	6570	2753	2690	6149	906
	'54	5979	2108	5116	18702	3104	2117	1131	659	6544	7304	1574	11567	7011	5897	5234	4919	6733	1429	3144	3296	10054	5113	6012	7406	1756
	'53	7185	2617	5986	22106	3684	2182	1258	832	7529	8328	1898	12396	8663	6161	5971	5912	6856	1503	3320	3704	11471	5458	6445	8461	1982
	'52	6143	2397	5312	19446	3857	1872	861	726	6642	7576	2007	10438	6595	5131	5022	4939	5946	1310	2615	3327	8497	5407	6051	7847	2096
	'51	8651	3184	7453	25263	5612	2758	1101	1017	8757	10297	2601	14711	10015	7675	7734	6718	7599	1955	2958	4589	12109	6694	7829	11015	2708
	'50	8968	3067	7439	25147	6287	2870	1155	873	8541	10030	2788	16355	10176	9303	8453	8207	7728	2017	3362	5140	12797	8280	7808	13149	3047
	'49	7660	2145	7257	19779	5169	2111	824	578	6966	7747	2360	13767	8350	9065	8995	6949	6891	1711	2506	3432	9076	6211	6792	11339	2538
	'48	6037	1932	4674	19404	4197	2505	767	586	5633	6446	2240	11788	7100	6505	7918	5657	5008	2220	2903	4545	7619	6115	5175	8915	2243
	'47	3325	1297	2358	13069	2794	1626	507	306	4146	3416	1456	7511	4989	4416	5391	3739	2432	1234	2095	3074	4899	3560	2397	6026	1394
	'46	5316	1676	2891	12598	2852	2326	639	273	3875	5601	1898	6798	5943	4685	6070	4415	3269	1914	1455	3569	4719	5306	4429	8055	2006
	'45	261	197	306	2545	301	265	67	7	497	332	231	761	713	944	914	633	262	242	405	322	663	456	207	784	294
	'44	143	86	92	1146	196	89	41	12	127	124	137	294	85	218	412	208	96	151	122	100	199	278	68	285	101
	'43	19	15	12	335	24	9	9		29	35	27	38	50	18	32	33	45	8	52	11	23	9	29	43	62
	'42	1443	654	670	4280	1224	474	172	78	1088	1498	706	1363	1404	988	1646	1055	864	494	105	641	943	1436	1062	1231	987
	'41	1845	1009	1255	10654	2012	1421	284	147	1668	1839	1329	3459	2962	2831	4315	2331	1098	789	805	1290	2354	3254	1158	3397	1297
	'40	1180	738	771	7037	1479	1129	158	57	1169	1305	957	2900	2249	2166	2763	1725	937	618	550	1038	1588	2561	949	2524	984
	'39	757	447	478	5070	1200	770	119	47	785	740	685	1825	1782	1587	1975	1146	515	426	376	721	1098	1704	500	1635	973
	'38	375	306	241	3796	727	451	76	23	433	433	429	1038	970	877	1937	864	234	264	233	419	656	1414	342	1040	418
	'37	535	529	316	5414	1075	723	131	24	824	575	650	1250	1378	1179	2068	883	322	415	293	576	1227	2081	431	1260	551
	Before '37	448	655	294	10066	1627	1252	150	25	717	654	995	1441	2082	1527	3185	881	455	546	389	739	1393	3726	395	1679	955
	Unid.*	84	24	1281	6	38	7	724	313	494	675	57	463	155	61	137	202	364	13	6228	58	476	31	230	685	32
	Total	70263	28713	58103	240982	49777	28767	11062	7069	71863	79588	28117	129662	87953	74187	84256	64487	61641	20663	35725	43345	98433	73831	60989	100905	28710
DIAMOND T	'55	10	5	30	138	17	62	1		63	13	7	447	62	72	17	15	19	3	16	59	62	27	4	78	2
	'54	18	12	19	164	17	65	3	14	68	13	7	395	65	68	29	28	38	12	21	69	90	46	6	39	11
	'53	30	12	16	245	68	77	8	16	82	43	13	363	112	60	40	31	57	38	25	116	109	85	5	48	13
	'52	17	12	11	262	34	85	19	13	82	47	33	345	92	60	43	25	71	5	18	97	74	68	4	41	21
	'51	15	11	13	377	44	95	16	21	133	50	35	622	100	95	51	41	65	5	19	129	75	101	6	56	33
	'50	24	21	12	314	38	93	16	24	97	16	54	538	112	95	54	53	90	8	38	174	78	80	10	74	33
	'49	13	10	21	215	77	65	16	14	67	46	60	378	92	150	92	67	95	4	26	91	48	62	18	58	60
	'48	40	18	45	400	137	158	25	27	98	61	97	808	212	235	209	149	148	13	57	222	125	263	47	167	55
	'47	41	19	46	389	96	116	19	21	108	82	69	754	207	218	167	96	165	18	44	240	150	199	39	159	60
	'46	24	7	17	216	43	57	4	12	62	32	26	372	87	83	77	33	28	7	14	102	57	89	22	83	27
	'45	8	9	4	109	22	40	1	1	40	12	27	157	51	45	44	22	13	1	4	63	26	44	10	71	14
	'44	5	1	2	69	12	9	1		13	2	11	52	13	20	12	9	11	1	3	22	15	13	6	20	7
	'43				39					7			3	3		1	1	3	1	1	4	2	2	2	7	2
	'42	3	5	2	71	7	16	1	4	17	2	12	42	5	18	13	13	21	6		41	7	20	19	11	7
	'41	8	6	3	210	24	51	3	3	25	8	12	224	49	54	54	14	33	10	10	102	27	50	4	47	23
	'40	10	3	2	100	25	52	4		19	5	13	204	36	63	34	23	19	4	6	56	24	53	8	35	14
	'39	1	3	2	70	25	33		1	9	1	19	131	27	43	28	13	23	6	4	32	13	44	1	35	12
	'38	1	3	6	58	24	26		1	2	2	8	73	17	22	53	11	3	6	7	25	5	46	3	13	11
	'37	1	4	3	95	43	36	3	1	10	3	24	92	18	33	86	17	8	6	6	34	8	59		23	21
	Before '37	1	6	2	140	48	60	1	1	7	2	21	193	59	60	84	35	13	20	17	54	18	140	1	58	40
	Unid.*	8		6		12	2	16	3	10	8	2	47	12	2	4	10	8	2	58	4	12	2	1	11	2
	Total	273	169	264	3701	808	1196	157	177	1019	448	550	6240	1431	1498	1212	706	931	176	394	1736	1025	1495	216	1133	868

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

STATES AND MODEL YEAR

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
AUTOCAR	'55																									
	'54	2		5	70	16	159	9	1	37	9	20	238	31	5		12	107	7	2	14	5	16	19	6	1127
	'53	1		4	118	6	244	8	1	82	12	27	179	35	7	1	1	81			27	4	14	17	8	1357
	'52		2	6	100	5	221	36		60	37	19	206	34	3		4	93		1	27		21	4	3	1365
	'51			4	153	1	328	42		91	9	13	213	61	17		2	54	2	3	30	4	8	14	3	1776
	'50	3	2	16	151	1	290	44		85	3	21	127	61	4		3	38	1	1	35	3	6	7	4	1543
	'49	8	1	6	93	1	261	17	1	42	7	11	144	42	7		4	17	2	3	21	4	7	11	1	1202
	'48	10	2	7	159	1	424	22	1	67	9	38	283	72	13		4	30		4	36	13	20	28	4	2015
	'47	3	4	14	322		726	9	4	165	4	32	354	69	9	4	2	10	2	7	40	24	33	45	1	3142
	'46	2	5	15	343	2	731	35	2	97	4	18	276	117	15	2	3	8	4	3	93	15	29	15	4	3176
	'45	3	1	5	121		283	10	2	54	4	22	98	34	1		3	13	1	2	18	10	7	18	4	1394
	'44	2	2	2	66		85	4		23	3	3	72	16	3		1	4		1	15	3	4	3	3	660
	'43	1	1		4		15	3			2	3	12	2	2		1	7			2	3	1	1		127
	'42	7	2	2	48	2	42	4		6	5	16	35	24	3		2	3	6		14	25	2	7	1	566
	'41	2		4	94	2	201	1		20	4	5	133	47	2			11			15	15	5	6	2	1097
	'40	1	3	4	48	1	136	4		20	1	2	66	14				1	2		4	2	2	5		567
	'39	1	1	1	59		141	1		10		2	80	11	2						8			5		490
	'38			1	26		57	1		7			44	6	1					3	3			1		271
	'37				31		122			4		1	39	7							2			2		321
	Before '37			1	29		212	1		12	1	2	57	7			1			1	4	4		3		583
	Unid.*				20		63			2	4		20	4				17					1	1		386
	Total	46	26	97	2053	38	4743	251	12	884	118	255	2674	694	94	7	43	494	26	31	408	134	176	212	44	23165
BROCKWAY	'55			5	93		240	1		3		159	111							4	2					682
	'54			4	185		475			7		53	780	2						11	9					1657
	'53			9	304		848			18		2	454				6			14	13		5			1888
	'52			8	222		809	2		10		6	494	2			3			15	10		35			1588
	'51	2		11	391		754			19		15	534	25	8					9	34		30	1		2088
	'50			3	368		784	5		11		8	382	48						9	44		68			2035
	'49			3	202		544	2		7		3	219	13	2			3		8	21		20			1260
	'48			12	349		808	14		18		18	450	12				5	1	9	27	1	32			2158
	'47	2		10	476		1012	2		17	1	9	589	21			1	3		15	37		109			2786
	'46	1		6	342	1	1032	11		29		5	322	9						13	35	1	37	1		2283
	'45	1		1	193		517	1	1	15		1	157	5						3	14		13	1		1153
	'44			3	99		191			1	1	11	127	4							7	1	8			542
	'43				4		7			1			10				2	2				1		1		41
	'42			1	15		56	1		1	2	4	14	1						1	3	2	2			125
	'41				72		462	1		1			75	7	1					2	11	2				791
	'40				43		249						44	1	1					1	12					415
	'39			1	31		224	1					42	1							3					380
	'38				20		128					1	15							1	5					209
	'37			1	21		112						31	2						2	2					204
	Before '37			8	43		226	2					54	1			1	1		5	4	1	1			402
	Unid.*			1	9		14						3					1		1						163
	Total	6		87	3482	1	9289	43	1	158	4	295	4877	154	12		13	15	1	123	293	9	360	4		22831
CHEVROLET	'55	1430	284	450	3101	2421	4990	4774	617	7102	3421	2083	8097	340	1493	591	3308	16999	746	343	2770	1506	1169	2726	742	164329
	'54	2925	435	809	5159	2263	10658	7045	1460	9768	7545	2714	10643	712	3979	1300	5903	25885	980	601	5238	3171	2727	5086	1228	252165
	'53	3210	634	833	5801	2486	11102	8722	1502	11255	7711	3038	12535	716	5487	1563	6522	25560	1359	602	5763	3839	3352	5589	1262	281933
	'52	3395	568	726	4576	2226	9484	7601	1836	9460	7057	3067	10731	594	4594	1693	5866	24737	1526	579	5457	3423	2714	4979	1424	251395
	'51	4823	684	936	7174	3129	13194	10811	2446	13831	9005	4696	15257	882	7014	2330	7982	35834	1979	837	7207	5142	4387	7370	1810	350065
	'50	5343	607	893	7090	3668	13941	10625	2460	15055	10354	4789	16635	989	5760	2474	9075	35921	2156	694	8196	5301	5019	8394	2011	370459
	'49	5965	488	741	8203	2842	10462	10334	3742	10887	8617	3880	11852	729	4622	2988	8078	25916	1625	560	7231	4419	4496	7455	1619	306555
	'48	4131	428	852	4931	1819	11009	8858	3199	10313	7354	3824	11807	952	4452	2281	6204	20274	1275	721	6358	4595	3982	6190	1340	265085
	'47	2770	285	549	3305	1200	7136	5588	1667	6042	5094	2536	6906	625	2617	1453	3554	11725	899	392	4845	2939	2649	4791	830	167826
	'46	3471	327	825	4061	1320	7834	9696	1851	7750	4717	3088	9538	927	3855	1591	4765	14946	957	602	4392	4196	2780	4479	903	199791
	'45	311	49	65	391	93	921	727	259	280	945	342	441	71	299	193	291	889	109	64	873	468	279	542	88	21198
	'44	158	21	19	150	61	366	246	195	54	446	206	154	38	135	129	127	301	82	24	297	232	101	265	56	8630
	'43	17	6	10	19	6	55	27	24	58	50	27	13	2	5	13	17	125	22	3	44	119	12	11	9	1661
	'42	1374	140	126	622	414	1228	1937	953	1824	1356	1300	2071	218	853	572	1105	4399	395	119	1348	1850	755	1288	363	52768
	'41	2154	286	398	1715	639	3560	3632	1694	3127	3274	2410	3960	385	1677	1096	1954	5954	647	284	2386	3155	1731	3338	813	105021
	'40	1370	240	336	1314	469	2733	2153	1330	2150	2210	1644	2738	295	1053	806	1177	3981	544	208	1572	1988	1394	2426	434	74088
	'39	1139	153	262	748	318	1712	1398	891	1370	1676	1049	1760	214	670	579	702	2773	382	140	1162	1417	879	1706	302	50424
	'38	784	91	127	500	186	1108	798	704	801	1174	713	1029	134	331	362	416	1421	201	83	696	904	473	1167	177	32196
	'37	918	153	209	725	235	1500	1074	853	1474	1460	1312	1779	170	530	504	486	2024	311	113	851	1791	821	2044	280	45877
	Before '37	1886	230	372	756	208	2225	997	1790	1674	1764	1677	1832	294	584	981	411	1821	452	168	869	2595	631	3112	417	64043
	Unid.*	61	3	11	153	6	148	37	6	98	181	23	34	38	17	22	321	355	3	2	76	91	6	31	14	14545
	Total	47345	6110	9552	57515	26031	115464	97080	29478	114373	85411	44240	127602	9327	50027	23541	68248	261840	16800	7119	67835	53141	40357	72928	15891	3080166
DIAMOND T	'55	71	2	2	101	20	164	37	3	121	13	74	97	23	4	8	20	79	7	3	7	9	4	27	3	2128
	'54	78	6	7	153	12	233	49	1	88	1	63	274	47	12	15	8	86	12	4	28	39	11	24	6	2572
	'53	69	7	2	119	28	335	31	1	148	5	72	181	24	7	19	26	130	18	6	23	50	11	54	11	3089
	'52	88	15	7	84	8	350	58	9	87	7	137	223	6	17	25	18	114	27	7	41	62	31	67	12	3099
	'51	109	8	5	130	8	441	29	5	194	2	87	313	23	29	29	12	130	25	8	49	71	28	83	14	4039
	'50	127	8	10	199	4	688	32	23	225	9	77	304	19	10	41	46	132	28		37	60	31	70	19	4345
	'49	151	5	6	124	11	453	29	56	121	21	44	211	8	21	65	62	119	34	8	32	71	67	84	48	3696
	'48	380	13	13	205	31	774	53	159	238	54	96	455	31	25	181	81	229	46	17	105	123	90	222	96	7613
	'47	149	8	15	221	15	800	79	68	237	63	212	404	24	34	80	56	186	35	14	96	168	57	202	41	6808
	'46	56	3	15	107	9	360	22	18	87	21	102	150	19	15	32	23	84	9	4	41	82	17	110	20	2967
	'45	26	2	3	62	6	159	1	15	53	14	49	103	10	5	22	3	52	4	5	34	57	40	60	14	1637
	'44	8		1	16	5	100	5	10	23	8	4	68	5	2	7	2	12	1	1	8	23	12	23	9	684
	'43	2			2		16	4		1	2	3	4	1		1	1	4	1	1	2	11	3	1		138
	'42	8	4	1	21	1	100	2	4	18	4	18	24	5	2	4	7	14	4	10	9	46	14	13	3	696
	'41	24	3	8	87	6	214	6	10	44	17	24	127	9	3	9	5	29	8	6	26	68	22	73	5	1889
	'40	33	2	3	66	8	187	11	17	35	11	18	89	13	3	21	4	30	5	3	8	46	13	77	4	1519
	'39	17		2	43	3	106	3	10	24	8	15	140	5	3	13	2	20	4	3	5	28	11	42	3	1088
	'38	16	2	1	23	2	70	6	13	19	7	19	62	2	2	6	1	21	3		5	23	10	50	7	797
	'37	26	7	4	37	2	65	3	23	27	17	21	73	10	1	11	3	18	8		2	34	7	53	11	1097
	Before '37	69	5		238	5	172	7	48	30	25	24	105	9	5	27	1	19	3	3	9	59	24	94	7	2066
	Unid.*	4	1		8	1	19	2		6	5	1	1	3		2	7	20			1	5	1	3		329
	Total	1491	101	107	2046	185	5808	468	483	1823	314	1160	3408	296	200	618	392	1508	282	103	568	1135	504	1432	333	52298

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

• TOTAL REGISTRATIONS •

TRUCKS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
DIVCO	'55	14	3		66	76	63	4	25	80	7		97	61	18	2	9	2	23	35	159	135	25	2	8	3
	'54	9	7		56	67	85	6	37	113	12	3	82	52	41	5	37	28	19	39	137	247	49	4	10	1
	'53	34	7		118	56	94	6	45	65	20	1	124	138	48	49	25	60	17	27	145	313	60		57	5
	'52	13	10		165	63	79	4	49	86	32	6	88	72	27	34	15	19	10	90	150	210	54		96	4
	'51	35	16	1	362	67	112	4	82	76	16	2	258	73	37	36	23	11	7	94	165	307	49		118	6
	'50	38	20		472	63	147	5	83	99	20	10	246	111	79	28	40	5	8	87	176	330	101		128	6
	'49	15	26		401	16	90	6	74	61	19	2	230	118	35	27	27	11	3	54	170	246	48		105	10
	'48	35	29		456	41	156	20	73	83	4	9	310	167	52	22	41	6	42	68	459	322	92		128	12
	'47	16	26		336	57	133	45	115	46	2	16	464	156	80	17	27	5	29	93	321	366	84		191	4
	'46	19	12	1	310	31	106	17	52	34	11	8	333	142	32	24	22	7	37	80	385	219	62		194	3
	'45	21	7		124	12	64	1	22	12		2	106	55	10	7	4		5	37	126	151	9		29	
	'44				30		8	2		2	1		13	16	1	4	4				22	12	1		1	
	'43				35		2						10	4		2				12	3	1			1	
	'42	2	3		62		11	5	16	39			12	52	2	13	4		5	9	45	29	3		4	
	'41	3	10	1	134		104	3	20	8		1	115	54	9	7	10		24	26	340	161			72	4
	'40	7	3		57	6	34	3	52	5	1		90	28	9	1	3		7	14	111	59	12		9	
	'39	1	11		64		46		23	4			84	21	8		4	1	1	12	102	19	14		25	1
	'38		4		17		16		28		2		40	7	6		1			7	51	12	14		12	1
	'37				3		4		1	1			13	3	1		3			2	4		4		1	1
	Before '37	1			42		3				1	1	31	2						1	6	4	68			1
	Unid.*							15		6	1		7	2	1		1			33	1	47			7	
	Total	265	194	3	3340	555	1354	146	787	820	149	63	2735	1334	492	278	300	155	237	820	3078	3190	749	6	1196	82
DODGE-PLYMOUTH	'55	656	441	658	3884	567	499	286	111	1061	931	365	2585	1130	701	465	536	546	262	675	766	1550	675	330	927	279
	'54	1038	521	637	4759	509	591	322	122	1287	1350	368	2227	1543	1084	630	717	886	268	826	1060	2269	940	675	841	343
	'53	1656	719	1113	6851	880	956	539	224	2423	2099	703	4080	2519	1414	1212	1307	1567	513	1176	1440	3816	1542	1111	1781	553
	'52	2184	810	1480	10009	1038	966	380	371	2683	2571	686	4077	2776	1561	1687	1454	1650	574	1229	1836	3493	1910	1687	2475	584
	'51	1592	723	1168	8074	1008	769	326	267	2515	2106	586	4510	2645	1573	1295	1283	1168	378	1172	1345	3227	1880	1143	2424	502
	'50	2477	794	1685	7762	1294	1142	342	266	2987	3042	565	5601	2781	2507	1643	1799	2036	602	1100	2450	3985	2065	1796	3258	606
	'49	2071	724	1455	6803	1424	977	327	318	2357	2295	794	5044	3076	2566	2258	1806	1644	579	1206	2033	2859	2240	1560	3137	764
	'48	1468	751	1025	9124	1402	938	330	296	1876	1816	759	4509	2669	2296	2137	1643	1278	532	1101	1935	3821	2424	1115	2871	776
	'47	1392	682	961	7756	1212	1137	353	270	1865	1788	729	4019	2917	1995	1987	1703	1090	813	1220	2256	3156	2178	987	2411	803
	'46	1745	501	838	6351	1062	1273	277	162	1787	1936	604	3541	2781	1892	1655	1619	1097	709	702	1877	2801	2409	1110	2217	681
	'45	85	119	113	1322	160	185	34	31	220	132	122	473	470	287	349	241	125	113	170	226	381	315	58	391	147
	'44	36	29	29	510	56	60	16	8	56	47	52	106	103	71	94	62	44	38	56	72	80	118	36	78	49
	'43	15	17	9	361	15	6	2		16	13	17	19	14	3	18	30	15	22	31	18	10	19	8	22	16
	'42	347	316	245	2526	436	199	79	31	501	398	273	574	510	337	470	359	304	175	29	350	412	506	296	346	192
	'41	434	451	281	3256	783	725	101	64	937	589	566	1268	1394	773	1023	676	317	356	377	1010	1138	1099	265	942	473
	'40	281	216	155	3176	469	508	75	36	516	325	306	946	958	562	822	470	199	189	262	580	760	806	171	637	222
	'39	130	191	121	2430	458	444	43	25	331	195	273	784	971	532	522	361	122	137	186	507	594	646	90	417	263
	'38	70	87	44	1580	257	186	31	12	196	95	133	291	375	285	370	159	63	97	84	218	278	383	49	220	100
	'37	95	156	68	3015	455	312	23	14	275	142	198	485	760	299	495	310	71	84	138	222	450	629	59	301	152
	Before '37	117	324	72	5359	575	631	44	7	372	212	412	551	1065	417	706	390	113	193	154	361	561	1001	88	398	325
	Unid.*	45	4	299	6	12	8	179	124	170	221	24	200	49	25	39	87	109	7	2266	18	353	14	59	166	9
	Total	17912	8578	12336	98994	14072	12494	4091	2799	24425	22303	8530	45850	31406	21179	19677	17012	14449	8641	14164	20580	35994	23783	12892	26260	7839
FEDERAL	'55	5					5							3	1			1			3		1			2
	'54	4		1			9			3	1		4	9			4	1		10	7	4	22			2
	'53	2	1	3	4	2	28	5	2	10	2		7	15			8	1		32	15	30	15		3	2
	'52	3		1	9	3	30	1	7	4	2	7	6	14				3	4	15	29	22	4	1	1	
	'51	3	3	3	28	9	50		13	8	5	10	38	33	4	4	6	3	13	48	28	27	3	2	1	4
	'50	3	2	1	34	5	61		7	1	22	2	21	14	1	6	7	3	19	38	41	18	3	2	4	2
	'49	8	1	2	18	16	28		14	12	6	6	15	11	4	8	7	9	1	19	13	6	19	8	3	7
	'48	7	12	8	43	54	74	6	11	25	15	24	114	46	13	77	54	5	29	34	47	56	122	8	36	44
	'47	22	5	12	112	31	116	6	10	46	18	39	133	69	31	73	57	11	54	45	81	116	155	3	65	19
	'46	26	11	11	133	11	82	1	6	48	22	23	68	33	26	34	30	15	24	25	70	58	57	10	49	
	'45	3	5	5	52	7	30	1	2	7	3	9	26	16	9	11	8	5	4	15	17	17	35	2	16	6
	'44	2	6	1	36	3	4	2		2	5	2	11	6	1	1	4	1	4	3	11	6	17		8	2
	'43	5	3	2	42	3	1	3	1	4	4	2	6	7	1	1	7	4		3	4	2	2	1	1	3
	'42	4	2	4	28	11	8		3	12	11	1	11	5	3	6	9	2	1	6	13	2	10		12	
	'41	2			25		15		1	2	1	2	14	1			1	1		9	18	6	14	1	5	4
	'40	1		1	30	1	14			8	4	2	14	3	1		3	4	2	3	14	1	8	2	5	1
	'39	2			21		12				1	2	11	5			3	1	2	4	10	4	8	1	1	1
	'38				14		5	1		4	1		9	1	1		3			2	7	1	11		6	1
	'37				15	2	7			3	1	1	11		1	4	2			3	10	3	18		8	1
	Before '37	1	2	2	68	4	26	1		5	1	4	23	4	2		4			1	13	9	22		9	5
	Unid.*	3		2			1	1	2	3	4	1	3	1			1			65		6	1		2	
	Total	106	53	59	710	162	606	28	79	207	129	137	543	296	99	225	218	70	157	376	451	395	547	41	235	106
FORD	'55	3377	1381	4219	14228	2254	1574	682	462	5584	4851	983	10893	5072	3453	2828	2833	3896	1231	2119	3879	7075	3071	2803	5652	997
	'54	4319	1837	4266	16113	2226	1563	826	555	6337	6342	1100	8649	6033	4961	4471	3533	5488	1135	2769	3777	9700	4512	4489	5142	1568
	'53	5512	1961	4771	16987	3056	1854	962	548	6372	7101	1565	10702	7606	5546	4958	5006	5726	1296	2685	3964	11720	5290	4753	6231	1774
	'52	3931	1743	3629	12739	2850	1510	724	514	4749	5498	1450	8341	5063	4065	4296	3528	4402	1227	1873	3321	7990	4263	3867	4974	1615
	'51	5580	2120	4504	16464	3753	1995	896	670	6313	7535	1787	9515	6889	5049	5342	4575	5825	1451	2170	4184	10373	5781	4951	6431	2010
	'50	7002	2123	5417	16965	4016	2208	870	690	7268	9546	1935	12110	8753	6048	6277	5755	6952	1233	2523	4311	11953	7206	5907	8051	2128
	'49	4142	1471	4075	11130	2468	1401	645	388	4235	5607	1337	7711	5430	4636	4348	3795	4982	1016	1524	3293	5983	4489	3985	5529	1432
	'48	3284	1501	3033	12688	3104	2011	586	586	4094	4040	1560	8435	5463	4618	5154	3870	3364	1612	1882	4613	7062	5425	3012	5744	1771
	'47	2257	967	1910	10453	2276	1350	498	359	2920	3295	1161	5512	4171	3294	4155	2648	2104	1251	1362	3238	4406	3877	1910	3863	1100
	'46	3303	967	2383	8136	1944	1205	403	195	3354	4716	1014	4750	3173	2893	3144	2426	2588	1035	702	2723	4264	3259	3072	3304	936
	'45	232	227	318	1951	388	349	72	58	595	454	200	964	1229	661	759	588	419	310	300	613	1034	914	237	674	232
	'44	98	103	104	637	182	88	31	15	213	244	102	293	332	227	307	176	165	149	75	233	269	392	127	186	106
	'43	30	109	46	1100	95	20	8	8	108	132	110	65	100	42	117	92	62	41	40	74	60	48	33	63	50
	'42	731	416	500	2988	824	380	106	94	1049	1500	391	884	821	644	1191	610	715	319	88	733	901	1101	761	651	564
	'41	1071	729	971	8106	1417	1077	200	89	1673	1737	847	2248	2078	2039	2845	1294	1099	681	418	1708	2363	3028	863	1879	836
	'40	934	352	606	5238	1015	855	141	79	1287	1461	626	1628	1516	1523	1759	799	790	426	281	1079	1556	2242	870	1255	647
	'39	440	291	402	3824	763	588	71	28	731	754	427	1114	1242	1197	1209	584	437	331	212	802	1004	1506	469	806	428
	'38	186	179	164	2753	494	356	62	13	417	349	303	563	647	612	1230	358	253	184	99	367	574	1297	224	428	387
	'37	207	309	229	4817	785	637	66	21	588	491	430	807	1171	762	1639	548	270	320	199	655	1124	1800	259	659	433
	Before '37	636	1416	663	24015	2859	2881	295	88	3676	1951	1368	2258	3984	2142	4819	1507	942	1291	537	2229	3937	6799	671	2232	1635
	Unid.*	89	26	1278	6	29	19	641	335	353	707	65	349	143	35	114	175	308	6	4497	56	537	34	206	447	31
	Total	47361	20242	43488	191398	36940	23921	8783	5793	61936	68311	18771	97789	70968	57267	60960	44712	50687	16550	26356	45852	93685	66354	43269	64201	20620

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N. H.	N. J.	N.M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
DIVCO	'55	18		12	94		172	16	1	253	2	6	85	7			5	19		3	24	6	17	47		1704
	'54	24		12	206		246	21	1	204	28	17	365	21		3	8	93		2	35	29	14	95		2600
	'53	19	2	14	158	1	308	54	2	206	17	22	137	17	4	6	18	30	3	5	53	19	30	73		2709
	'52	14		9	148	2	339	43	2	206	45	25	344	12	12	3	15	86	7	2	54	17	21	61	2	2843
	'51	21		14	230	1	450	75	5	369	50	46	408	35	20	2	40	130	24	3	106	42	33	75	1	4107
	'50	11		13	236	4	401	52	3	452	60	37	324	51	22	7	41	139	7	3	81	76	40	118	3	4483
	'49	3	3	12	218	4	451	41	3	331	36	22	218	35	14	6	17	125	7	6	48	53	29	127		3803
	'48	4	1	35	319	1	862	52	3	439	51	31	494	100	4	5	34	150	15	8	80	126	40	165	4	5650
	'47	14	5	25	417		579	33	7	372	32	41	689	76		4	19	120	24	4	71	84	52	185	6	5492
	'46	3	2	14	265	2	286	44	7	266	47	41	325	75	12	11	38	58	27	2	78	68	49	142	1	3944
	'45	3	1	10	104		113	6	1	100	14	12	160	17	1	4	5	42	6	1	31	23	16	27	1	1506
	'44				4		1	1		7	1	10	63				1				13	1	1			217
	'43				23		4					1	6								8					112
	'42	2		3	30		26	11		32	7	12	33	13		1	3	9	2		31	8	5	16		560
	'41			14	120		140	15		149	12	20	170	43	1	2	15	11	2		37	50	20	18		1945
	'40	4		2	170		202	9		64	4	5	70	44			12	4		2	18	8	11	24		1194
	'39	1		1	122		91	16		93		4	76	19			17		6		9	18	5	28		927
	'38				48		124	12	2	29		1	52	9			4	10	2		7	7	4	14		543
	'37			1	4		3	3		11			8	2			5	1				1	1	4		85
	Before '37				9		3	2	1	16	1	1	6	2			8					2	1	4		214
	Unid.*	1			5		10			3	1		1				1	2				2			1	148
	Total	142	14	191	2870	15	4811	506	38	3802	408	354	4034	578	90	53	303	1029	134	41	784	640	389	1223	19	44556
DODGE-PLYMOUTH	'55	297	112	135	1240	351	2214	839	183	1845	558	565	1727	102	352	143	733	2467	296	105	588	608	387	686	199	37578
	'54	495	140	243	1530	308	3743	1096	245	2741	918	696	7521	183	1109	218	971	2735	216	129	1125	1016	736	900	192	55021
	'53	594	282	259	2039	458	5933	2083	396	4320	1383	1331	4199	307	1145	424	1704	5390	375	261	1423	1789	1223	1575	284	83353
	'52	838	279	300	2143	548	5186	2400	583	4361	2111	1502	6093	344	1596	573	2065	6785	350	276	2192	1967	1339	1740	320	96042
	'51	962	196	213	2164	408	5075	2184	505	4047	1760	1478	7378	267	1131	568	1830	6063	336	173	1923	1736	1228	1679	327	87292
	'50	982	186	379	2380	566	6263	2483	600	4401	2377	1456	5202	508	1450	631	3007	7280	365	310	2013	1764	1550	2108	443	103289
	'49	1289	182	326	2423	730	6223	2832	704	4726	2668	1525	5425	354	1386	709	2220	8054	545	272	2364	1942	1700	2041	473	101430
	'48	1341	220	302	2320	513	6506	2674	962	4706	1906	1772	6078	361	1129	962	1557	5788	474	219	1997	2104	1470	2072	442	96769
	'47	1371	216	401	2288	504	6032	2536	905	4507	2263	1637	6130	390	1211	983	1611	5386	436	350	2101	1958	1716	1976	397	92685
	'46	1040	185	337	1955	400	5337	2205	802	4053	1886	1433	3640	375	1111	779	1579	4578	345	275	1611	1865	1493	1888	316	81115
	'45	209	28	45	251	51	695	297	199	594	470	227	1136	58	132	141	112	802	42	44	322	286	201	280	56	12947
	'44	63	8	14	72	12	206	69	80	132	117	88	566	16	40	43	26	139	33	6	73	120	52	81	28	3990
	'43	14	7	5	19	18	51	7	15	28	35	62	89		1	2	16	50	15	4	12	108	16	9	9	1310
	'42	274	78	63	348	134	857	510	345	686	626	709	287	90	329	205	398	1329	190	69	316	1275	338	394	129	20189
	'41	481	140	182	828	220	2003	943	483	1644	988	1193	1957	215	555	368	480	1934	269	142	1038	1620	706	985	237	40889
	'40	289	85	136	575	128	1267	854	365	1180	542	641	1343	119	277	272	260	981	160	102	609	858	473	773	100	25809
	'39	279	45	109	514	102	1161	520	258	899	424	500	1518	105	172	244	204	712	139	69	386	699	393	672	125	20902
	'38	161	32	46	238	36	567	147	135	434	233	233	627	35	77	107	93	317	46	47	176	402	162	352	58	10403
	'37	198	62	60	339	56	673	251	189	778	327	572	930	74	115	147	134	440	118	51	250	823	220	684	77	16756
	Before '37	389	118	128	450	63	1034	315	354	926	399	951	1214	119	143	280	144	465	190	65	296	1431	303	958	126	25316
	Unid.*	14	3	9	45	4	72	5		48	38	10	8	18	7	7	94	92			22	51	3	7	5	5055
	Total	11580	2604	3692	24161	5610	61098	25250	8308	47060	22029	18581	63068	4040	13468	7806	19218	61787	4940	2969	20837	24402	15709	21860	4343	1018340
FEDERAL	'55				4		4			1		2	10					1		2				3		48
	'54				28	1	52			17	1	9	92					4		2	3		4	9		300
	'53				56		123	4		68	1	10	102				9	13		5		4	11	4		597
	'52			1	45	2	96	9		75		3	143		6	1	7	8	6		20	1	34	11		634
	'51	4		2	96		112	9	4	57	3	12	102			2	12	10	14	3	19	2	36	14		855
	'50		4	1	65		196	9	1	94	1	8	84	6			17	14	6	1	17	4	15	22		880
	'49	1	1	10	53		123	29	11	69	2	7	44		1	3	12	5	2	2	13	7	19	11	1	667
	'48	30	4	5	73	8	295	19	73	99	16	44	143	1	8	30	29	24	21	8	26	22	61	49	4	2058
	'47	45	3	7	118	3	287	46	44	167	41	79	179	3	16	39	36	45	23	17	79	22	70	64	6	2767
	'46	25	1	13	113	9	228	17	10	95	14	59	100	5	11	5	38	27	6	6	39	18	34	31	3	1780
	'45	11	1		60		125	6		37	12	38	35	2	3	1	11	14	4		15	10	12	14		722
	'44	6	1		19	1	58	2	1	13	7	27	14	4	4	1	3	5	3		6	4	7	6	1	331
	'43	2		1	11	1	16	3		3	3	12	2		1	1	3	5			3	18	1	2		198
	'42	6			12	2	32	7	2	4	16	24	2	1	2		6	9	4		4	18	2	13	1	331
	'41	1	1	3	24		49	1	1	10	3	17	23	1		1	11	1			6	5	3	4		287
	'40		1	3	23	2	25		1	2	3	9	14	10	1		3	2	1			2	4	4		232
	'39			6	10		14			4	2	9	11	1	1	1				1	2	5	1	2		159
	'38				10		4	1	2	8		5	5		1							3		3		114
	'37			1	14		11	1	1	5	4	9	3	4				1			1	4	1	3		153
	Before '37	3		7	28		54	1	2	10	4	32	15	10	1	1	6	2		1	1	13	2	16		413
	Unid.*				4		3	1		2							1	1				4		2		114
	Total	134	17	60	864	29	1907	165	153	840	133	414	1123	48	56	85	204	194	92	48	254	164	317	287	18	13840
FORD	'55	1595	473	474	3679	1455	5916	4335	669	7791	3179	2049	6638	468	1780	719	3445	15292	722	352	2820	1927	1193	3100	718	165966
	'54	3040	407	634	4784	1158	8886	5024	1310	9119	6061	2247	8697	617	2708	1302	4296	17931	696	499	4721	2799	2206	3996	830	205699
	'53	3237	589	677	5461	1517	10169	7010	1559	11644	6202	2798	11692	720	3728	1261	5330	20036	1126	514	4854	3500	3127	4855	1041	240680
	'52	2868	420	555	4146	1411	7584	5317	1518	8181	5147	2462	8642	661	2908	1256	4007	17167	1081	351	3992	2803	2226	3662	998	187565
	'51	3718	516	680	5394	1671	9748	7365	1989	10629	6026	3238	11204	802	3995	1838	5206	22685	1292	514	5030	3453	2975	4905	1150	242986
	'50	4744	498	726	5620	1914	10579	9265	2356	12658	7890	3773	14189	845	4171	1974	6539	28906	1373	480	6056	4187	4138	6570	1138	289806
	'49	2877	350	582	3577	1009	7240	6240	2083	6958	4994	2268	7899	534	2808	1404	4181	15990	872	445	4091	2896	2755	4011	805	181923
	'48	3288	360	754	3750	1091	8761	5951	2589	9127	5586	2781	10404	706	2833	1774	3855	14346	1066	527	5224	3623	3174	4684	870	195427
	'47	2362	232	540	2645	641	6340	3892	1767	5552	3876	1783	6488	559	2255	1417	2480	9020	720	451	3849	3010	2111	2955	585	135885
	'46	1935	254	498	2478	615	5318	3784	1,28	4056	3569	1806	5630	493	2468	902	2678	9805	645	418	2884	2801	1755	2939	552	125500
	'45	561	47	92	594	95	1367	856	335	1532	1226	335	552	97	389	281	242	2351	134	75	1029	597	398	573	124	27699
	'44	252	11	38	261	44	442	512	159	417	377	123	56	41	165	116	83	726	58	36	355	217	140	242	69	9795
	'43	51	44	27	74	12	136	162	48	86	239	125	34	13	72	43	29	374	114	12	67	237	84	37	28	4801
	'42	809	155	112	459	206	997	1242	699	883	1562	736	1611	164	756	415	499	3202	335	59	829	1340	488	794	204	37261
	'41	1698	266	312	1313	383	2638	2102	1419	2501	2675	1621	2742	393	1216	893	1033	5611	505	213	1606	2342	1049	2234	415	78674
	'40	1175	142	280	848	273	1876	1325	973	1584	1889	1022	1900	264	854	622	643	3583	372	157	1166	1335	793	1619	303	53983
	'39	855	119	211	582	169	1228	859	713	1034	1369	763	1223	237	539	456	401	2155	241	112	826	992	519	1080	232	36585
	'38	579	79	106	316	91	665	477	670	544	968	466	703	131	263	303	180	1261	161	38	386	592	231	820	140	22660
	'37	763	122	152	516	110	1147	648	691	1132	1112	925	1371	240	432	421	248	1523	243	79	558	1304	427	1441	179	35006
	Before '37	3409	602	897	1720	331	4892	2328	2823	3847	3111	3148	4712	919	2079	1771	743	4246	674	411	1703	5273	1257	5636	756	132117
	Unid.*	58	6	6	141	5	109	55	5	94	145	20	32	33	23	21	267	283		1	83	73	10	21	4	11961
	Total	39894	5692	8353	48348	14201	96058	68747	25503	99369	67203	34489	106419	8957	36441	19191	46185	196892	12630	5744	51909	45301	31056	58174	11141	2421981

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

TRUCKS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D. C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
G.M.C.	'55	980	434	1147	3903	715	406	126	289	1278	920	478	2132	1051	526	585	806	739	375	405	901	1294	568	490	1426	345
	'54	1175	560	1325	4212	741	424	158	130	1489	1486	487	1842	1003	763	988	892	1263	383	613	742	1660	908	1328	1423	445
	'53	2155	1011	1954	7700	1396	634	231	302	2265	2376	1039	3340	2206	1249	2020	1660	2055	802	744	1030	2960	1518	2196	2708	851
	'52	1763	904	1940	6790	1282	487	172	258	1684	1799	808	2460	1546	1008	1873	1316	1738	614	590	809	2038	1224	2235	2207	626
	'51	2055	941	2155	8126	1431	542	176	369	1769	2293	958	3123	1763	1415	1616	1405	1771	549	839	1133	2299	1305	2489	2776	703
	'50	2349	980	2027	7615	1544	783	265	286	1870	2274	1166	3654	2202	1633	1964	2451	2339	674	857	1276	2855	1653	2582	3226	845
	'49	1651	481	1422	4980	1163	419	199	137	1232	1568	821	2552	1743	1427	1656	1390	1387	550	502	804	1666	1306	1669	2238	783
	'48	1371	515	941	5927	1009	599	237	208	1139	1145	636	2694	1962	1146	1301	1228	939	630	536	1161	2059	1292	1154	1852	586
	'47	590	272	358	3851	589	424	130	124	672	526	290	1578	1249	596	785	585	361	281	381	811	1122	772	396	932	305
	'46	483	144	209	2063	265	223	88	40	328	466	185	665	458	345	422	390	201	202	185	509	530	376	359	472	185
	'45	69	56	63	909	147	133	37	23	177	64	71	174	179	125	171	102	56	50	72	136	209	156	35	134	78
	'44	45	35	18	373	53	36	24	11	63	32	31	95	72	39	62	46	24	43	21	84	69	97	25	114	38
	'43	28	22	16	315	23	21	5	5	38	14	25	20	30	11	21	26	16	19	14	37	18	16	20	23	32
	'42	142	123	104	1384	304	134	44	46	321	235	194	235	328	164	342	225	166	127	29	211	147	371	165	212	168
	'41	201	152	149	3276	364	420	55	41	257	253	264	650	553	316	571	359	135	113	134	407	406	526	151	457	251
	'40	132	95	102	2148	259	282	27	42	145	169	152	429	416	201	348	240	86	76	79	204	235	440	110	308	143
	'39	41	66	55	1615	141	170	24	14	79	96	116	229	293	111	233	135	50	42	44	165	150	272	53	223	101
	'38	23	34	9	918	64	85	9	9	49	29	61	82	102	49	194	82	29	31	21	47	77	121	26	81	50
	'37	30	79	32	1547	238	219	14	14	71	39	149	232	310	117	434	162	29	40	30	118	167	276	43	130	90
	Before '37	24	27	15	1032	98	130	14	11	38	21	74	110	146	75	164	99	29	23	16	114	95	175	23	115	48
	Unid.*	58	7	351	10	41	8	181	75	102	128	32	121	71	27	33	64	121	8	1119	17	128	4	75	172	5
	Total	15345	6987	14392	68694	11947	6561	2216	2433	15064	15935	8039	26417	17688	11343	15784	13605	13558	5432	7031	10416	19964	13376	15826	21232	6678
INTERNATIONAL	'55	889	341	996	2923	835	742	248	190	1289	971	537	5485	2617	1946	946	853	925	412	946	1333	1233	1222	536	2099	481
	'54	1464	485	1045	3230	950	791	217	193	1640	2017	643	4776	2873	2637	1653	1048	1585	459	907	1102	1805	2204	1340	1863	917
	'53	1154	525	969	4168	1069	759	273	248	1788	1730	801	4619	3319	2745	1714	1297	1492	430	1132	1271	1804	2394	1297	2014	759
	'52	1662	819	1583	5714	1588	866	269	208	1909	2745	973	5123	2867	2080	2680	1602	1894	746	1042	1494	1884	2418	1814	2501	1160
	'51	1537	586	1336	4937	1277	861	292	318	1714	2055	872	5428	3328	3257	2304	1556	1461	579	1026	1471	2143	2716	1473	2534	1106
	'50	1454	461	1148	3918	1080	786	249	238	1559	1828	818	4993	3122	2776	1959	1626	1395	583	972	1476	1869	2601	1294	2301	783
	'49	1584	408	1200	3837	1264	1015	364	247	1461	1770	823	5984	3048	3329	2665	1815	1643	594	826	1614	1964	3161	1243	2756	990
	'48	1877	511	1046	5604	1720	1095	396	365	1586	2075	925	6523	3570	3307	2643	2238	1677	859	1065	2159	2358	3137	1317	3041	1151
	'47	1393	487	864	6167	1554	1205	354	293	1512	1562	836	5339	3393	2897	2474	1758	1194	764	974	2091	2061	2826	915	2873	1007
	'46	1444	391	728	4473	898	852	212	151	1263	1399	554	3431	2225	1859	1751	1279	925	636	644	1454	1387	2369	838	2075	619
	'45	153	207	127	1501	246	223	74	24	294	259	194	1156	785	529	374	377	163	195	231	424	380	465	139	509	177
	'44	98	164	67	982	141	57	38	28	99	101	99	459	259	198	264	145	85	129	75	204	119	256	65	221	106
	'43	21	58	14	598	40	10	9	4	39	28	38	55	39	29	45	29	26	20	41	32	15	21	11	27	24
	'42	307	159	164	1749	223	202	55	46	418	347	261	420	399	381	413	279	295	212	54	319	179	601	242	273	193
	'41	409	281	255	3470	657	701	107	72	561	441	520	2239	1891	1498	1576	749	365	219	356	776	675	1713	304	1231	600
	'40	247	150	128	2319	460	531	45	25	293	274	335	1190	1068	981	912	521	219	140	168	366	456	1323	175	655	394
	'39	169	117	100	1584	263	338	36	15	166	200	269	815	805	672	592	335	172	109	100	280	297	997	129	479	281
	'38	88	95	58	1341	253	207	24	14	118	94	194	558	500	482	806	277	126	71	79	133	173	1438	90	317	306
	'37	61	89	34	1449	306	203	16	15	111	85	266	510	562	475	645	233	85	30	85	118	154	265	59	318	205
	Before '37	81	144	60	2146	363	331	20	15	132	120	307	552	617	503	600	277	119	95	87	187	234	1012	101	385	477
	Unid.*	43	18	322	12	32	3	206	100	140	174	30	255	99	29	59	84	170	6	1835	29	149	21	73	176	16
	Total	18105	6508	12244	62122	15221	11778	3508	2811	18094	20255	10095	60190	37374	33350	27475	18381	16006	7288	12845	18333	21329	33160	13455	28848	11753
MACK	'55	90	13	29	121	96	166	163	7	274	126	18	253	87	45		39	24	143	113	290	74	35	9	62	11
	'54	96	13	25	169	47	123	128	11	376	120	19	119	38	31	10	33	58	116	107	273	78	28	23	49	35
	'53	107	34	15	206	81	118	32	30	310	108	30	152	65	49	10	37	49	82	137	271	79	56	32	85	30
	'52	166	39	25	272	92	138	29	24	271	132	82	131	105	44	10	26	87	87	122	283	76	52	31	40	29
	'51	133	31	23	384	87	184	45	20	345	241	55	194	135	49	17	70	46	128	166	373	173	65	55	97	22
	'50	160	20	17	360	56	150	27	41	375	173	35	176	116	76	27	41	56	66	116	415	168	83	52	95	6
	'49	92	12	24	146	28	181	21	20	220	108	16	131	68	58	16	39	45	68	91	306	104	114	27	45	4
	'48	82	18	15	280	34	155	23	56	172	111	27	230	98	58	28	47	71	82	109	458	87	102	34	87	21
	'47	82	20	24	351	46	247	18	45	217	121	28	357	101	96	34	72	107	96	109	463	119	103	44	153	18
	'46	36	4	6	122	7	48	18	14	149	68	4	93	34	41	11	23	39	42	35	227	35	71	24	39	2
	'45	18	11	2	116	24	36	6	11	81	51	5	63	43	34	14	10	32	24	46	239	40	102	9	28	
	'44	10	3	2	92	12	26	7	7	60	31	7	55	17	12	4	5	4	19	19	104	10	14	5	13	2
	'43	2	1		10	2	1	1		10	11	1	6	1	1		1		4	8	23	2	2		2	1
	'42	18	1		74	6	19	5	8	72	32	1	29	11	10	5	10	29	29	20	100	5	16	14	10	
	'41	10	8	2	281	24	104	9	19	66	26	2	103	35	10	9	39	14	24	50	273	16	83	13	99	2
	'40	6	6	2	214	10	144	6	17	32	20		66	17	11	11	17	9	21	82	151	6	35	4	32	1
	'39	1	1	3	156	5	81	2	6	17	8	2	63	19	10	2	13	11	5	17	109	14	15		28	1
	'38	1	3	2	95	5	50	1	4	9	7	1	24	6	2	3	12	3	6	8	57	2	16		13	1
	'37	3	5		82	7	26		1	7	2	2	32	3	2	3	16	1	3	14	43	5	15	1	7	2
	Before '37	1	11	3	268	5	94	3	5	17	7	6	115	9	12	23	33	12	29	4	167	10	44	6	32	8
	Unid.*	3		4	1		1	24	47	21	16	7	11	3	3		2	3	1	233	9	12	2	3	3	
	Total	1118	254	223	3802	662	2144	568	392	3101	1519	318	2405	1631	651	231	585	700	1073	1578	4634	1115	1063	388	969	183
PONTIAC	'55																									
	'54	8	9	1	142	1	3	38		1	1	2	8	13		24	15	2		1	12	35	4	2	8	3
	'53	2	10	1	302	10	4	71	7	6	12	2	27	29	11	30	38	8	7	4	28	67	21	2	15	6
	'52	4	4		224	6	3	47		13	7	2	29	20	12	18	23	6	2	7	16	31	15	4	9	6
	'51	11	7	4	300	15	11	62	4	30	15	10	43	43	16	34	29	4	7	10	45	58	28	14	18	2
	'50	14	12	9	283	19	16	33	3	39	14	10	63	46	17	36	31	15	12	10	82	59	28	11	14	2
	'49	10	8	2	270	6	11	27		13	17	4	48	26	9	16	5	8	19	10	41	31	16	6	9	2
	'48																									
	'47																									
	'46																									
	'45																									
	'44																									
	'43																									
	'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	23	12	5	488	14	33	134	3	16	28	4	33	27	3	56	18	7	16	22	14	32	50	8	9	12
	Total	99	92	22	2009	71	83	412	17	116	92	34	249	196	68	212	169	50	63	64	208	313	162	47	76	32

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
G.M.C.	'55	320	139	107	1051	626	1587	909	183	1508	659	811	1110	67	327	166	1016	2643	268	124	585	660	301	787	325	38268
	'54	631	185	196	1427	521	2637	1097	209	1647	1291	1032	4415	112	605	306	1191	3291	272	160	979	1099	636	839	293	51551
	'53	1129	403	259	1917	902	3928	2654	535	2983	2440	1787	2424	149	1392	569	1961	6872	510	297	1449	1997	1116	1579	614	86068
	'52	966	241	188	1451	655	2936	2248	389	2259	2009	1418	3165	117	1096	416	1691	6888	464	237	1474	1431	941	1305	566	72720
	'51	1298	320	235	1594	857	2978	2562	494	2667	1938	1636	4080	154	1301	567	2060	8370	636	227	1580	1634	1111	1550	597	84433
	'50	1372	274	301	2439	1128	4594	2751	540	3649	2351	1860	3343	215	1353	569	2637	10595	710	281	1693	1828	1517	1704	576	97250
	'49	1020	164	196	1462	562	3145	1446	650	1931	1668	1121	2701	119	948	462	1808	5308	493	180	1327	1191	932	1239	384	64183
	'48	807	146	211	1851	449	3767	1101	609	2849	1213	1381	3538	176	892	543	1549	3586	373	212	1233	1428	1262	1441	286	62940
	'47	579	67	103	1262	214	2156	566	276	1787	778	524	2380	196	321	285	617	2055	235	121	665	781	606	730	129	35395
	'46	179	47	89	397	128	978	276	131	486	357	340	928	85	219	161	433	745	131	84	332	343	284	438	64	17476
	'45	95	13	10	287	33	589	61	56	212	207	212	241	41	63	67	45	370	42	31	111	282	160	128	37	6851
	'44	40	10	7	95	10	165	41	25	103	91	107	169	7	32	26	27	113	47	10	68	171	40	71	17	3044
	'43	15	6	4	17	5	61	27	11	30	42	75	47	5	14	7	17	85	10	6	28	124	49	15	5	1524
	'42	260	57	39	221	87	626	190	169	302	404	590	1145	41	109	138	182	696	68	40	195	831	220	295	94	11921
	'41	293	72	57	435	109	907	282	327	565	444	680	679	114	122	190	334	802	130	51	256	797	292	577	115	19096
	'40	156	46	50	315	60	645	159	170	360	286	422	427	55	104	122	186	480	116	26	177	524	203	348	70	12374
	'39	130	35	36	131	45	391	86	80	222	181	264	487	60	53	76	96	197	62	20	116	345	104	254	80	8043
	'38	66	28	16	72	15	225	42	39	104	111	165	157	31	21	20	39	96	34	12	61	184	56	111	13	3981
	'37	120	34	33	140	37	336	87	71	249	243	293	237	47	52	60	61	170	66	19	88	409	105	333	52	7949
	Before '37	105	23	30	139	10	275	30	91	100	82	135	171	40	18	41	29	70	31	15	73	295	44	186	20	4727
	Unid.*	42	3	2	36	10	77	22		37	70	5	5	4	7	6	116	103		2	18	30	5	10	3	3571
	Total	9823	2313	2169	16739	6463	33003	16637	5055	24050	16865	14858	30829	1835	8049	4797	16095	53533	4696	2157	12508	16384	9994	13940	4280	693365
INTERNATIONAL	'55	783	91	124	1483	505	3623	940	465	3476	970	797	2321	184	330	510	1170	4494	276	162	749	828	338	1839	321	57652
	'54	1444	112	228	1795	472	4658	1361	892	3823	1564	990	8391	210	777	848	1469	5286	411	233	1236	1357	710	2152	449	78733
	'53	1341	168	243	1887	482	4950	1632	940	4691	1795	1368	4150	284	681	715	1438	5103	396	314	1222	1656	871	2226	499	79125
	'52	1925	203	262	1731	534	4297	2137	1454	3870	2364	1488	5083	255	1272	1422	1831	6305	566	282	2007	1953	957	2434	699	93854
	'51	2040	211	276	1720	487	4438	2042	1330	4159	1955	1557	5374	316	1288	1215	1835	6121	525	321	1939	1773	1040	2702	595	91435
	'50	1631	113	267	1800	458	3945	1550	865	3983	1767	1238	4875	304	710	1045	1618	5656	428	260	1520	1484	826	2589	404	80337
	'49	2079	111	223	2031	397	5636	1769	1643	4084	2106	1061	3498	386	846	1250	1732	5243	536	274	1383	1855	1243	2430	509	87946
	'48	2095	157	328	2389	485	5898	1835	1703	4751	2740	1639	5468	446	982	1619	1803	5522	522	318	1819	2161	1215	3046	598	101772
	'47	1852	143	314	2212	429	4919	1520	1198	4052	2612	1426	5639	458	695	1183	1634	5114	458	270	1792	2022	1302	2797	515	91350
	'46	1115	123	268	1326	304	3167	1265	878	2734	1392	965	2627	297	597	753	1196	2962	393	213	1195	1405	750	1809	296	62090
	'45	352	24	84	453	73	970	247	195	766	587	628	1011	108	107	215	180	883	95	66	316	592	312	664	104	18238
	'44	259	17	25	167	32	356	86	102	240	337	470	628	46	59	122	75	374	58	14	122	365	106	266	39	8824
	'43	23	15	6	41	17	70	23	10	26	92	226	88	9	27	7	25	74	18	5	23	229	17	23	12	2379
	'42	316	92	43	312	67	658	330	253	448	463	588	298	137	201	183	268	606	115	29	341	981	161	408	79	15562
	'41	980	98	123	803	173	1944	492	1090	1533	1051	913	1879	190	217	717	446	1548	223	82	643	1455	524	1263	239	40290
	'40	633	62	73	505	76	1235	261	769	846	567	596	894	104	146	482	213	803	151	69	310	938	309	870	182	24469
	'39	467	40	64	275	53	783	219	478	534	383	348	918	74	104	353	209	465	99	54	212	677	190	555	114	16982
	'38	386	31	37	182	36	553	129	501	401	425	313	512	34	62	226	86	385	85	25	159	618	141	449	88	13656
	'37	358	46	24	224	44	432	156	338	441	402	312	586	35	61	220	72	370	104	13	130	656	178	455	105	12125
	Before '37	593	59	77	248	46	686	111	712	506	450	412	661	57	77	335	112	366	108	34	117	749	148	638	150	16609
	Unid.*	37	2	7	106	2	68	21	3	53	61	12	8	23	14	16	168	108			23	43	4	23	3	4878
	Total	20709	1918	3086	21690	5172	53277	19026	15819	45317	24103	17367	55107	3957	9253	13436	17803	57788	5567	3035	17256	23699	11342	29838	6000	996306
MACK	'55	11		39	313	71	545	150		304	35	61	340	32	56	2	200	194	12	5	249	55	24	53	7	9038
	'54	22	6	70	391	48	869	308	3	238	57	144	1086	38	62	1	101	289	25	8	125	55	79	46	12	6213
	'53	32	10	54	363	81	968	294	2	304	45	86	570	35	75	1	125	218	29	32	160	86	114	66	20	8996
	'52	20	17	75	365	75	878	332	6	199	67	193	832	39	144	2	121	273	32	27	173	104	99	71	18	8521
	'51	34	17	73	642	71	1282	322	2	392	45	257	1127	78	164	11	215	327	30	11	181	129	101	75	15	8737
	'50	23	13	88	577	44	1296	356	7	345	48	194	647	60	254	2	162	239	43	49	158	126	111	89	9	7876
	'49	18	2	86	374	18	1171	200	4	163	26	66	534	75	103	3	67	113	17	16	85	77	65	67	9	5274
	'48	46	6	71	498	16	1366	244	36	241	36	116	849	47	93	8	85	173	25	22	106	102	155	60	21	6888
	'47	82	2	112	705	30	2128	199	42	364	58	203	899	48	88	14	96	196	28	56	109	156	126	110	20	8914
	'46	19	3	39	219	14	690	105	6	91	11	33	192	25	43	6	38	90	4	14	35	73	29	13	2	2934
	'45	19	3	31	255	24	728	79	2	124	14	39	266	32	42	7	17	73	6	15	38	48	61	26	6	2993
	'44	4	1	18	144	6	267	31		35	29	22	178	16	18		11	45	6	3	23	20	38	10	7	1463
	'43			2	20		87	1	2	6	3	3	38		2	1		4			3	11		1		252
	'42	2		5	63	1	184	17		28	13	36	101	22	16		7	30		3	22	32	16	16	1	1136
	'41	4	4	53	402	2	996	32	3	70	14	26	364	58	35		19	48	18	10	84	85	34	33	1	3755
	'40	4	3	23	251	2	683	23		34	8	32	178	38	6	1	9	23	9	2	25	50	11	26	1	2332
	'39	2	2	23	162	1	551	17		36	6	22	196	29	10	1	9	10	5	5	16	27	7	12		1726
	'38		1	13	74	1	401	7	1	19	5	11	92	19	5			8	1		11	19	5	13		1028
	'37	6		9	75	2	318	4		10	5	16	71	6	4	1	2	5	1	2	3	23	1	9	3	860
	Before '37	6	2	45	220	2	1057	9	3	18	3	25	122	21	3	1	8	21	11	6	7	56	2	14		2616
	Unid.*	1		2	31		7	4		3	2	1	8	7			12	2			4	5		1		497
	Total	356	94	901	6132	512	16472	2734	119	3022	519	1590	8681	705	1223	62	1321	2341	302	288	1577	1339	1077	831	150	83049
PONTIAC	'55																									
	'54	10		7	50	1	11	6		17	62	7	105		8	1	3	5	1		7	17	2	4	1	652
	'53	9	1	7	75	3	39	11		42	89	24	50	6	15	3	4	31	6	1	13	31	15	16	3	1214
	'52	8		4	58	1	25	16	2	33	44	16	66	1	6	4	4	27	2		10	15	6	16	1	871
	'51	16	2	14	96	1	71	29	4	55	74	17	76	4	18	5	11	57	8	1	20	34	18	25	4	1482
	'50	14	3	4	108	2	90	34	2	68	52	29	141	7	21	6	16	67	15	3	26	37	20	33	5	1653
	'49	3	2	2	76	5	128	18	2	38	46	13	60	4	11	1	9	41	9	1	29	8	22	36	2	1175
	'48																									
	'47																									
	'46																									
	'45																									
	'44																									
	'43																									
	'42																									
	'41																									
	'40																									
	'39																									
	'38																									
	'37																									
	Before '37																									
	Unid.*	14	5	11	107	1	81	17	2	14	65	50	58	4	16	3	5	22	11	2	10	22	15	46	2	1650
	Total	74	13	49	573	14	445	131	12	267	434	156	558	26	95	23	52	250	52	8	115	184	98	178	18	8697

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955

For Summary of Trucks in Use by Makes, by Model Year, see page 126

TRUCKS IN USE BY MAKES, STATES,

Model	Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
REO	'55	17	7	7	64	40	38	3	24	74	17	10	142	55	13	25	10	3	3	36	71	67	15		32	4
	'54	12	21	9	91	38	51	2	8	74	27	9	100	55	14	11	17	11	5	41	122	92	42	1	49	7
	'53	29	39	18	172	22	81	12	10	139	63	10	129	92	50	17	25	8	15	40	243	182	69	1	49	15
	'52	9	23	14	190	36	71	3	26	114	40	13	92	82	40	21	34	23	23	54	96	162	77	3	70	22
	'51	29	17	11	89	41	46	10	23	145	52	13	149	106	37	11	23	12	6	51	112	164	40	2	54	30
	'50	35	2	21	117	21	47	8	18	97	49	17	159	84	41	28	27	22	5	30	143	138	32	7	59	19
	'49	29	14	36	124	27	28	7	12	69	44	31	180	113	48	70	36	26	22	37	106	66	41	10	86	41
	'48	68	85	103	211	130	86	12	19	107	112	131	547	266	203	255	219	73	82	69	180	325	161	47	173	137
	'47	70	55	22	362	66	77	20	35	145	86	66	276	229	127	108	99	62	56	97	178	248	140	21	108	35
	'46	94	36	20	417	56	76	14	35	152	96	49	241	176	89	91	116	56	18	68	232	258	79	19	111	22
	'45	7	7	1	134	24	8	7	6	33	8	6	141	71	34	17	32	19	5	45	49	67	78	1	18	5
	'44		4	6	60	5	4		1	10	1	1	196	12	2	1	5	2	2	1	8	3	4	2	3	
	'43			3	29	5	1			4		3		3	3	1	2			6	1	3		1	2	
	'42	8	6	1	162	5	2	2	5	23	9	11	18	17	4	10	7	16	7	5	16	6	8	5	13	3
	'41			1	90	3	11	4		5	4		29	20	8	12	7	3		3	22	20	24	1	13	1
	'40	2	1	1	12	1		3		3	3		7	4	1	2	3	4	1	1	4	1	2		6	1
	'39				36	2	4			4	1		4	2	3	4	1	1		3	3	3	4	1	5	1
	'38	2	2		100	9	11	1	1	6	1	3	16	12	5	7	5		2	3	16	6	15		6	
	'37		2		101	11	17	2		6	2	4	13	10	5	13	4		3		13	19	10		4	2
	Before '37		1	2	412	6	61		2	14	5	14	30	19	36	17	9	4	18	10	58	21	55		8	19
	Unid.*	3	2	8	4	1	1	10	10	9	5		11	6	7	6	3	1		142	8	13			3	
	Total	434	324	284	2977	549	719	120	235	1233	625	391	2480	1434	770	727	684	346	273	782	1681	1884	897	122	874	361
STUDEBAKER	'55	73	89	194	606	126	94	31	2	275	165	119	453	486	126	123	130	190	80	99	104	193	149	111	155	109
	'54	52	40	73	302	67	56	64	7	170	132	52	189	211	85	103	72	181	49	90	92	93	111	72	94	67
	'53	493	260	479	1865	309	344	97	22	965	810	266	1228	1239	527	516	520	674	230	204	568	684	557	449	692	293
	'52	611	240	542	1825	425	264	81	32	1133	946	267	1001	1128	537	539	567	671	209	240	423	690	611	581	667	281
	'51	768	276	658	2286	497	290	85	26	1256	1091	352	1187	1405	737	601	615	809	222	212	482	783	886	625	877	298
	'50	803	336	689	2511	643	299	74	27	1214	1013	401	1488	1427	854	693	665	909	183	239	591	857	1201	744	1099	369
	'49	1291	702	1162	5526	1267	668	191	61	1644	1481	1037	3421	2920	2071	1959	1216	1373	404	254	999	1947	2504	1093	2110	829
	'48	262	178	200	2045	292	268	52	20	425	375	301	911	745	433	519	315	283	177	316	354	568	580	237	423	234
	'47	434	265	319	3096	407	445	101	34	716	502	400	1355	1215	847	829	544	456	267	263	584	973	812	313	771	354
	'46	205	143	150	2195	216	274	73	18	417	282	240	703	1043	473	458	261	180	126	128	318	602	499	138	399	228
	'45	10	13	3	126	25	21		2	16	6	30	143	92	63	37	43	12	6	8	15	37	145	13	53	35
	'44	2	6	3	42	6	1	1		4	3	169	24	11	12	2	10	2		1	3	16	38	2	14	43
	'43	2	2		36	1	2			3	1	5	9	4	4	3	7	4	2		2	3	6	2	2	41
	'42	19	14	1	152	28	12	8	2	34	22	21	38	57	30	47	31	17	7	2	8	24	62	12	30	26
	'41	20	30	25	344	54	60	3	4	57	32	60	105	209	62	64	42	20	13	16	39	81	84	18	45	49
	'40	13	6	3	65	14	13	1	1	24	10	10	26	57	8	10	16	12	5	4	10	10	18	4	8	4
	'39	1	10	2	179	22	11	1		9	6	15	33	35	12	11	6	5	5	2	40	12	22	5	4	9
	'38	1	1	1	156	7	9			4	3	10	10	10	12	9	5	1	4	1	1	4	16		5	12
	'37	2	9	3	288	16	22	1		7	3	30	12	31	15	29	11	2	3	1	6	16	43	2	3	19
	Before '37	1	3		168	13	19	1	1	10	3	10	39	37	20	13	15	6	3	3	11	11	53	2	11	12
	Unid.*	17	3	112	7	3	3	15	37	57	57	11	36	14	5	13	15	48	2	486	4	33	3	20	54	5
	Total	5080	2626	4619	23822	4438	3175	880	299	8440	6943	3806	12411	12376	6933	6578	5106	5855	1997	2569	4654	7837	8400	4443	7516	3317
WHITE-STERLING	'55	72	13	53	199	66	87	116	20	299	117	29	571	305	59	66	62	74	51	107	287	124	38	6	223	32
	'54	173	44	80	348	65	75	131	42	364	176	26	406	364	89	74	112	97	63	141	338	237	54	33	284	19
	'53	212	53	106	322	58	71	33	16	383	242	22	557	534	176	131	95	135	53	201	346	235	120	41	357	38
	'52	200	48	93	505	73	59	23	50	354	191	21	438	431	152	132	81	155	37	142	349	152	58	50	365	29
	'51	240	64	84	632	75	84	24	47	272	242	30	552	504	145	142	81	118	50	144	395	230	101	56	439	47
	'50	250	45	56	500	72	67	56	20	272	296	32	521	449	131	114	106	119	38	152	561	214	167	45	391	19
	'49	134	17	23	300	49	34	16	24	136	116	11	336	240	58	75	109	75	15	73	273	165	80	27	189	11
	'48	134	51	43	379	74	56	35	40	157	140	38	583	303	107	87	96	83	30	117	378	212	191	57	204	39
	'47	114	60	33	568	94	91	34	34	142	117	31	480	263	96	116	105	90	60	102	518	146	243	45	299	39
	'46	77	32	23	579	54	101	24	35	125	105	16	256	197	57	60	69	60	40	99	439	91	176	30	181	23
	'45	22	31	9	405	46	52	10	13	58	34	25	166	98	24	48	27	41	21	96	230	98	99	7	135	13
	'44	9	7	1	255	24	9	3	8	19	16	6	61	28	12	15	18	13	6	30	104	11	43	6	70	4
	'43	5	2		93	11	6	1	15	8	5	4	11	12	7	18	11	7	2	21	14	8	11		10	10
	'42	15	10	4	233	40	15	7	28	37	39	10	65	27	17	24	22	35	7	16	74	24	37	7	32	11
	'41	19	17	1	375	30	78	8	27	29	50	13	162	63	10	18	50	18	6	55	193	26	74	3	106	7
	'40	10	11	1	199	7	23	1	16	13	29	3	48	23	3	11	17	10	4	20	70	7	33	5	34	2
	'39	2	8		117	13	15	1	8	7	9	3	29	9	1	3	13	4	2	25	56	4	20	4	11	3
	'38	1	5	1	141	8	19	1	9	5	9	1	26	6	2	2	9	6	1	11	27	1	19		16	3
	'37	8	6	1	153	8	20	2		6	8	4	37	11	4	3	11	4	1	13	33	7	25	1	11	18
	Before '37	6	4	1	458	27	43	2	11	16	15	10	69	25	6	9	14	8	5	104	81	5	68	3	31	26
	Unid.*	6	2	12		4	2	16	24	14	16	2	29	15	9	2	3	9	1	274	5	51	1	5	30	
	Total	1707	530	625	6761	899	1025	546	484	2716	1974	337	5405	3907	1167	1152	1114	1161	493	1903	4771	2036	1658	431	3418	391
WILLYS	'55	33	162	19	1006	433	152	23	15	273	52	207	223	91	71	83	76	48	128	51	249	186	81	29	53	325
	'54	47	157	31	638	204	52	23	16	315	111	159	129	90	52	125	98	54	115	34	105	148	131	66	46	296
	'53	82	225	81	1037	349	132	89	33	635	197	270	252	348	148	286	213	138	232	64	274	403	288	127	105	496
	'52	103	191	79	929	253	82	60	20	408	179	246	244	188	119	234	166	104	137	79	116	279	194	134	119	385
	'51	202	258	199	1488	463	205	122	61	864	345	352	459	521	222	441	421	237	171	119	214	447	369	346	199	590
	'50	245	282	185	1033	414	177	156	40	731	282	293	375	503	183	356	335	263	130	63	185	328	250	271	231	534
	'49	256	181	281	918	470	161	132	41	595	385	287	475	557	371	464	512	389	143	100	192	472	299	337	309	547
	'48	302	490	519	2141	877	367	173	69	796	886	193	1012	1354	718	933	916	377	340	193	458	1282	815	405	467	809
	'47	129	317	231	789	396	86	157	11	239	470	47	276	583	326	450	360	148	224	55	140	604	281	209	166	444
	'46	43	405	136	1081	204	64	74	10	194	379	18	92	657	140	360	174	47	166	67	108	616	228	120	67	188
	'45	9	50	10	95	23	11	5	5	22	113	4	19	65	8	44	38	9	39	3	17	25	12	12	3	26
	'44	4	16	2	75	7	4	1	3	6	53	3	3	4	1	12	6	4	9	1	7	5	4	6	2	3
	'43	1	26	9	176	23	2	4	1	11	75	3	4	9	1	33	13	6	5		3	7	6	5	2	16
	'42	13	56	22	326	31	7	3	10	43	364	7	11	35	14	41	14	24	20	1	10	12	13	35	10	25
	'41	24	22	9	307	15	11	5		62	53	5	11	29	11	11	12	12	5	2	8	21	15	15	11	7
	'40	6	12	5	245	22	12	2		59	26	13	12	55	5	14	18	11	17	2	7	15	22	10	14	12
	'39	2	2	2	121	4	10	1		15	7	1	4	10	1	7	4		8	2	3	10	4	3	3	2
	'38	3	6	1	136	7	8			20	3	3	4	16	3	11	6	1	3	3	2	10	6	5	6	2
	'37	1	4	1	229	3	3	2		9	3			5	2	2	5	1			2	2	2	1	3	3
	Before '37	3	6		217	5	3	1		6	6	3	3	9	3	5	4	3	1		1	4	13	5	6	7
	Unid.*	8	6	72	16	20		13	22	40	66	10	13	12	1	6	18	19	7	219	7	37	3	13	20	7
	Total	1516	2874	1894	13003	4223	1549	1046	357	5343	4059	2124	3621	5151	2400	3918	3409	1895	1900	1058	2108	4913	3036	2154	1942	4722

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

AND MODEL YEAR—*continued*

Model	Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
REO	'55	19		12	28	6	217	9		131	10	17	90	3		3	20	49	6	6	35	17	5	22		1480
	'54	6		20	39	2	331	15		206	21	12	341	4		5	7	64	8	2	39	29	8	32	3	2101
	'53	12	3	20	67	4	443	42	4	247	28	26	234	17	3	19	28	112	15	10	64	52	25	74	1	3080
	'52	10	2	13	75	14	364	25	2	186	44	17	274	21	4	33	18	145	19	7	60	23	46	74	6	2820
	'51	27	2	11	104	8	495	24	3	218	40	18	244	4	15	9	7	112	14	10	30	35	42	55	7	2807
	'50	17	1	33	71	4	329	21		174	47	8	341	14	2	7	25	54	10	11	23	19	25	92	2	2556
	'49	39	1	14	76	3	315	71	8	118	59	22	234	14	12	12	44	90	18	10	22	63	49	65	10	2672
	'48	104	4	35	159	16	624	135	92	434	197	86	391	39	73	76	98	264	33	34	60	156	150	224	40	7349
	'47	75	11	38	157	18	555	92	44	328	142	79	448	35	73	38	58	194	3	27	86	103	111	176	6	5681
	'46	43	5	47	90	7	294	94	38	180	76	56	307	7	73	29	45	99	5	21	68	135	57	148	13	4578
	'45	9	1	16	26	6	71	18	30	59	30	20	82	2	26	4	6	26	7	4	16	53	31	27	9	1403
	'44		1	7	5	4	7		1	13	5	22	18					7		1	2	25	9	2	1	463
	'43				2		6	3	1	3	2	7	5					2	1		2	4	1		1	107
	'42		8	6	23	1	17	2	3	14	5	90	23	7	7	1	2	13	5	1	15	78	6	15	2	713
	'41			3	17		32	1	2	19	2	17	52	4	4	1	5	8			6	15	15	19	1	502
	'40	1	1	1	3		6		2	1	3		13	2			1	2		1	2	1	3	3		109
	'39	3		2	3		9		1	7		4	12	1		1		1			1	4	4	2		137
	'38	6			3	2	16	1	2	14	4	12	29	7	1	4	1	7				9	8	14		371
	'37	5	1	1	7	1	20	3	2	14	5	7	36	2		4		3	3	1	3	14	8	15		386
	Before '37	13	3	21	23	5	88		12	27	7	18	90	25	1	7		28		7	1	56	10	47	2	1311
	Unid.*	2	1		3		10	1		5	4	2				1	3	9				3	6	4		307
	Total	391	45	296	981	101	4249	557	247	2398	731	540	3264	208	294	254	368	1289	147	153	535	896	617	1110	104	40943
STUDEBAKER	'55	74	60	33	131	86	241	220	21	291	119	147	279	19	47	25	115	569	54	16	148	93	61	115	29	7277
	'54	68	39	32	104	40	183	111	31	187	176	61	1157	21	45	47	70	278	27	19	140	83	57	70	18	5588
	'53	280	152	89	516	263	1196	873	166	961	531	322	732	108	344	178	470	1916	104	88	468	384	263	548	113	25358
	'52	454	81	65	422	305	855	1004	227	1175	693	369	1282	67	483	235	614	2458	119	67	744	382	276	500	127	27515
	'51	633	87	100	550	296	1059	1161	271	1400	647	487	1405	79	492	315	696	2899	154	57	619	506	371	663	158	32431
	'50	524	87	95	573	375	1193	1045	298	1280	947	517	1530	104	461	311	874	3115	182	60	732	566	386	831	175	35590
	'49	1559	197	151	1129	577	2732	1936	898	2814	1378	1255	1557	205	795	721	1545	5087	451	156	968	1423	820	1642	406	68532
	'48	366	53	72	437	71	923	452	336	797	705	399	2151	73	164	255	301	996	125	68	688	466	225	564	96	21296
	'47	578	82	111	657	147	1378	738	425	1186	696	649	1725	133	273	351	428	1513	184	73	620	831	471	633	128	30312
	'46	319	48	38	435	77	836	526	234	802	389	457	826	55	223	202	228	970	117	55	363	586	234	371	93	18253
	'45	32	2	2	27	5	60	13	60	120	24	44	112	5		40	8	39	9	3	14	62	33	88	9	1765
	'44	4	1	2	7		11	7	26	6		151	56	3	6		1	7	3	1	18	139	8	12	9	894
	'43	4			5	1	16	5	1	9	2	19	7			1	2	7			10	58	12	7	2	309
	'42	22	7	1	12	10	32	31	43	32	27	22	31	1	6	11	18	28	5	1	14	59	13	30	14	1174
	'41	33	12	13	45	9	265	36	56	149	38	83	99	12	16	33	23	58	21	6	36	158	46	66	16	2905
	'40	5	1	1	28		62	7	3	21	9	10	11	3	3	3	11	39			9	29	1	16	3	627
	'39	10	2	1	10	2	101	5	3	8	1	40	25	7		5	3	19	15		2	56	4	10	1	787
	'38	3	4	1	4		13		5	8	6	19	17	2		4	2	8	4	3	1	25	5	16	2	434
	'37	9	10		23	2	34	3	7	23	11	62	26	4	5	6	1	15	8	2	1	83	10	29	3	951
	Before '37	12	4	2	19	2	45	1	14	25	4	17	39	7		12	6	12	5	3	5	34	6	26	3	768
	Unid.*	5	1		9	1	17	2		12	12	1	1	4		6	52	41			8	12	2	4	4	1254
	Total	4994	930	809	5143	2289	11254	8176	3125	11306	6415	5131	13068	912	3363	2761	5468	20114	1587	678	5608	6035	3304	6241	1409	284020
WHITE, STERLING	'55	43	1	4	313	16	535	160	2	500	58	142	401	25	46	6	98	594	16	1	110	25	40	130	8	6352
	'54	77	9	21	449	47	838	297	6	740	137	75	1530	34	130	23	318	1126	22	6	197	42	68	138	13	10180
	'53	85	5	11	461	60	901	386	6	837	198	82	734	63	160	14	227	1050	24	10	274	91	102	224	14	10558
	'52	110	10	22	341	48	718	339	9	711	240	120	967	53	197	18	199	984	38	5	211	107	104	178	32	9947
	'51	111	7	42	490	33	1116	278	12	971	240	137	1077	75	178	14	236	784	43	9	218	178	124	213	29	11413
	'50	90	5	16	522	29	1145	325	9	972	234	90	866	66	152	22	240	613	41	5	196	123	124	279	20	10897
	'49	33	2	15	317	26	787	174	3	631	115	52	514	36	83	9	124	302	15	2	126	77	74	107	10	6220
	'48	91	2	20	351	28	909	212	26	740	122	131	835	73	129	25	136	441	26	16	157	181	185	233	28	8731
	'47	132	7	36	390	50	1027	199	20	842	108	125	1010	47	103	26	132	456	42	14	178	171	158	285	53	9536
	'46	78	5	27	300	37	786	122	9	452	64	104	509	51	86	8	81	233	21	11	100	90	101	167	16	6407
	'45	49	6	12	140	16	424	61	16	259	76	96	347	20	25	4	26	164	14		53	97	61	113	14	3855
	'44	21	1	4	86	5	184	24	2	109	16	39	155	7	13	4	14	51	17		40	39	19	55	6	1669
	'43	17	2	3	22	3	27	10	2	40	11	24	22	1	2	1	5	13	6		13	18	8	9	5	554
	'42	44	4	12	29	14	108	30		78	18	59	70	8	14	3	23	32	14	2	41	71	30	41	3	1578
	'41	31	3	13	118	14	311	98	2	221	28	46	210	20	15	2	21	59	10	1	40	130	32	78	14	2913
	'40	7		5	86	4	116	10	1	120	17	32	65	7	4		5	20	11		30	35	12	21	1	1209
	'39	3		5	38		109	7	2	46	5	16	63	8	3		12	9	2		12	24	6	20	5	758
	'38		2	1	33	2	86	4		35	2	15	33	5	3		3	9	2		3	22	3	11	1	604
	'37	3	4	5	56	2	105	8		67	8	23	60	10	3	1	4	10	9		9	35	12	6		831
	Before '37	7	1	16	76	4	215	10	6	88	16	31	82	13	9	1	6	24	2	2	18	96	10	57	5	1842
	Unid.*	3		1	12	3	13	5		11	3	5	5				24	17			3	13		4		654
	Total	1035	76	291	4610	441	10457	2719	133	8470	1716	1446	9555	620	1355	181	1934	6991	373	84	2029	1663	1273	2369	277	106708
WILLYS	'55	159	67	72	98	80	368	144	27	296	69	489	245	8	24	95	27	261	159	52	125	209	203	134	211	7691
	'54	170	55	84	116	72	494	174	40	172	103	414	972	14	48	124	29	338	101	49	136	245	266	143	206	7807
	'53	373	109	120	280	118	856	432	71	601	219	530	571	26	91	293	106	614	159	99	204	381	573	375	284	13989
	'52	328	101	94	217	54	446	310	78	391	276	458	834	15	94	182	76	518	132	63	244	321	384	282	230	11156
	'51	470	122	123	553	152	1058	574	170	788	492	711	1256	49	176	364	207	1252	193	104	289	571	857	414	377	20635
	'50	356	87	90	508	134	799	414	167	522	548	595	888	42	189	305	202	1124	156	65	321	450	865	316	295	17283
	'49	658	73	67	436	112	811	673	170	654	804	470	719	52	287	377	319	1493	182	39	332	417	1152	352	270	19793
	'48	894	116	156	734	146	1933	1817	351	1582	1424	439	1678	136	633	909	386	2619	210	131	787	653	2195	1345	386	38552
	'47	469	56	74	204	22	770	1042	145	557	920	111	667	39	428	505	154	1209	96	27	299	308	1062	597	220	17129
	'46	287	107	98	181	6	693	950	102	497	526	34	409	35	412	309	59	846	33	9	203	162	742	689	76	13101
	'45	25	7	16	27	1	73	64	15	53	41	9	20	10	47	29	10	81	8	2	18	23	70	37	7	1360
	'44	8	16	2	17		47	42	1	5	29	2	6	2	16	9	4	33	5		4	14	28	6	2	539
	'43	15	3	1	13		31	64	2	6	50	5		1	27	8	2	57	8		11	15	32	12	12	816
	'42	26	30	12	10	3	58	165	7	27	107	31	3	2	83	5	17	203	21	1	27	74	61	22	12	2154
	'41	9	8	5	15	1	31	39	8	32	32	28	47	9	26	8	15	43	8	1	4	36	16	12	5	1121
	'40	10	7	4	25		33	31	5	48	22	53	31	1	8	2	17	37	6	3	6	39	14	8		1028
	'39	4		1	3		5	5	1	13	9	3	23	1	2		4	12	1		5	9	6	7	4	344
	'38	5	2	1	8		6	6	3	23	11	10	17		2	4	3	15		1	3	11	3	8		409
	'37		1	2	1		4	3	1	4	4	11	8	1		1	2	5				22	2			355
	Before '37	3	3	2	6	1	18	1	2	10	8	10	12	1			2	19	2	1	2	20	3	10	4	454
	Unid.*	11		2	18	1	18	25		8	23	3	2		3	5	14	36			2	7	2	5	4	846
	Total	4280	970	1026	3470	903	8552	6977	1366	6287	5717	4416	8408	444	2596	3534	1655	10815	1480	647	3022	3987	8516	4774	2605	176562

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

For Summary of Trucks in Use by Makes, by Model Year, see page 126

• TOTAL REGISTRATIONS •

TRUCKS IN USE BY MAKES, STATES,

	Model Yr.	Ala.	Ariz.	Ark.	Calif.	Colo.	Conn.	Del.	D.C.	Fla.	Ga.	Idaho	Ill.	Ind.	Iowa	Kan.	Ky.	La.	Me.	Md.	Mass.	Mich.	Minn.	Miss.	Mo.	Mont.
ALL OTHERS	'55	38	18	180	1334	64	127	211	3	99	63	26	378	217	88	126	38	86	29	28	104	131	65	11	105	27
	'54	25	58	201	1466	88	89	123	13	86	124	23	235	177	44	45	32	78	13	16	162	83	69	34	30	44
	'53	28	63	262	1450	53	74	123	13	106	127	40	292	186	50	44	47	89	18	27	167	107	57	33	34	60
	'52	27	72	267	1393	80	66	163	7	140	159	34	257	138	42	48	58	67	24	53	192	87	64	35	36	85
	'51	40	85	284	1644	87	96	230	6	134	152	42	296	231	51	77	57	56	11	35	189	110	87	40	38	67
	'50	48	43	329	1765	98	75	87	14	77	155	33	260	217	38	50	38	78	15	16	231	91	65	40	65	61
	'49	39	35	287	1437	88	56	115	6	83	117	46	217	172	56	93	99	76	22	16	156	144	50	31	50	40
	'48	44	58	224	1217	83	106	168	15	124	120	52	364	262	51	77	98	74	30	25	275	146	101	42	65	62
	'47	40	50	137	1373	145	142	94	9	166	106	58	393	290	80	94	99	66	67	39	279	260	136	31	106	50
	'46	40	54	129	1047	81	112	41	8	80	106	53	337	238	62	60	56	50	61	58	220	196	120	36	76	36
	'45	6	28	28	424	53	25	11	2	24	36	44	103	59	20	31	16	21	43	1	99	14	35	4	13	37
	'44	1	5	8	285	11	5	8	1	5	14	8	38	17	11	12	6	9	16	3	64	6	16	5	2	16
	'43		2	2	108	9	5	1	1	3	8	8	11	7	7	8	2	10	1	2	41	2	7	1	4	2
	'42	18	17	43	237	19	24	33	4	22	35	17	69	28	16	16	17	18	21	2	83	12	32	10	11	17
	'41	13	19	43	601	29	43	34	4	51	47	34	117	79	36	54	32	12	25	7	100	44	63	18	28	23
	'40	14	8	39	397	29	29	11	3	29	42	23	106	52	35	28	39	10	16	8	96	23	47	14	17	18
	'39	5	10	22	262	15	23	7	1	36	29	16	59	55	22	20	20	5	21	5	60	17	38	10	10	10
	'38	4	7	9	207	11	19	4	3	12	19	9	49	31	16	20	16	3	19	6	49	11	42	7	9	12
	'37	7	16	12	351	42	51	10		18	22	22	66	69	41	40	16	5	23	6	75	17	109	4	10	19
	[Before '37	11	26	16	1269	97	106	19	5	66	35	42	243	128	221	99	34	24	144	18	554	42	289	12	52	49
	Unid.*	70	4	514	17	59	40	142	12	146	59	34	274	184	101	8	102	119	48	227	99	83	9	80	59	27
	Total	513	679	3033	18284	1241	1313	1639	130	1477	1575	664	4124	2817	1056	1050	885	923	658	590	3295	1626	1481	498	820	782
	U.S. Total	178189	76901	151598	743284	14159	97640	35480	24097	216163	223952	80027	401014	275657	212494	223777	171433	168491	63826	107297	169367	294074	230138	154385	239585	84134

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

Trucks in Use by Makes and by Model Year

As of July 1, 1955

Based on Data from The Reuben H. Donnelley Corp.

Model Year	Auto-car	Brock-way	Chev-rolet	Dia-mond T	Divco	Dodge, Ply-mouth	Fed-eral	Ford	G.M.C.	Inter-national	Mack	Pon-tiac	Reo	Studе-baker	White, Sterling	Willys	All Others	Total
1955	(1)	682	164,329	2,128	1,704	37,578	48	165,966	38,268	57,652	5,038		1,480	7,277	6,332	7,691	5,848	501,841
1954	1,127	1,657	252,165	2,572	2,900	55,021	300	205,699	51,551	78,733	6,213	652	2,101	9,588	10,190	7,807	5,953	689,919
1953	1,357	1,889	281,933	3,089	2,709	83,353	597	240,680	66,068	79,125	5,995	1,214	3,080	25,358	10,558	13,989	5,987	848,981
1952	1,385	1,588	251,395	3,009	2,843	96,042	634	187,565	72,720	93,854	6,521	871	2,820	27,515	9,947	11,156	6,341	776,278
1951	1,776	2,088	350,065	4,039	4,107	87,292	855	242,986	84,433	91,435	9,737	1,482	2,807	32,431	11,413	20,635	7,206	953,787
1950	1,543	2,035	370,459	4,345	4,483	103,289	880	289,806	97,250	90,337	7,876	1,653	2,556	35,590	10,897	17,283	6,536	1,036,818
1949	1,202	1,260	306,555	3,698	3,903	101,430	667	181,923	64,183	87,946	5,274	1,175	2,672	65,532	6,220	19,793	5,938	862,071
1948	2,015	2,156	265,085	7,613	5,650	96,769	2,058	195,427	62,940	101,772	6,889		7,349	21,296	8,731	38,552	7,636	831,940
1947	3,142	2,786	167,826	6,806	5,492	92,885	2,767	135,885	35,395	91,350	8,914		5,681	30,312	9,536	17,129	8,766	624,674
1946	3,176	2,283	199,791	2,967	3,944	81,115	1,780	125,500	17,476	62,090	2,934		4,578	18,253	6,407	13,101	6,463	551,856
1945	1,394	1,153	21,198	1,637	1,506	12,947	722	27,690	6,851	18,238	2,993		1,403	1,765	3,855	1,360	2,307	107,019
1944	660	542	8,630	684	217	3,990	331	9,795	3,044	8,824	1,463		463	894	1,669	539	1,070	42,815
1943	127	41	1,661	136	112	1,310	198	4,801	1,524	2,379	252		107	309	554	816	492	14,821
1942	566	125	52,768	696	560	20,189	331	37,261	11,921	15,562	1,136		713	1,174	1,578	2,154	1,581	148,315
1941	1,097	791	105,021	1,889	1,945	40,889	287	78,674	19,096	40,290	3,755		502	2,905	2,913	1,121	2,846	304,021
1940	567	415	74,098	1,519	1,164	25,809	232	53,983	12,374	24,469	2,332		109	627	1,209	1,028	2,224	202,156
1939	490	360	50,424	1,088	927	20,902	156	36,585	8,043	16,982	1,726		137	787	758	344	1,542	141,254
1938	271	209	32,196	797	543	10,403	114	22,669	3,981	13,656	1,028		371	434	604	409	1,238	88,926
1937	321	204	45,977	1,097	85	16,756	153	35,008	7,949	12,125	860		396	951	831	355	1,964	125,032
Earlier	583	402	64,043	2,066	214	25,316	413	132,117	4,727	16,609	2,616		1,311	768	1,842	454	7,273	260,754
Unid.*	386	163	14,545	329	148	5,055	114	11,961	3,571	4,878	497	1,650	307	1,254	654	846	4,806	51,164
Total	23,165	22,831	3,080,166	52,298	44,556	1,018,340	13,640	2,421,981	693,365	998,306	83,049	8,697	40,943	284,020	106,708	176,562	93,817	9,162,444

Unid.*—Unidentified as to model year. (1)—Included with White, Sterling.

Trucks in Use by Makes

Arranged in Descending Order, as of July 1, 1955 Totals

Based on data from the Reuben H. Donnelley Corp.

Rank	Make	Number in Use	% of Total	Rank	Make	Number in Use	% of Total
1	Chevrolet	3,080,166	33.62	10	Diamond T	52,298	.57
2	Ford	2,421,981	26.43	11	Divco	44,556	.49
3	Dodge, Plymouth	1,018,340	11.11	12	Reo	40,943	.45
4	International	998,306	10.90	13	Autocar	23,165	.25
5	G.M.C.	693,365	7.57	14	Brockway	22,831	.25
6	Studebaker	284,020	3.10	15	Federal	13,640	.15
7	Willys	176,562	1.93	16	Pontiac	8,697	.09
8	White, Sterling	106,708	1.16	—	All Others	93,817	1.02
9	Mack	83,049	.91		Total	9,162,444	100.00

AND MODEL YEAR—*continued*

	Model Yr.	Neb.	Nev.	N.H.	N. J.	N.M.	N. Y.	N. C.	N. D.	Ohio	Okla.	Ore.	Pa.	R. I.	S. C.	S. D.	Tenn.	Tex.	Utah	Vt.	Va.	Wash.	W.Va.	Wis.	Wyo.	Totals
ALL OTHERS	'55	98	18	28	284	48	403	19	1	98	186	235	167	27	19	1	34	113	51	8	22	156	15	87	16	5648
	'54	56	65	17	193	46	284	35	8	99	104	319	409	42	13	7	52	181	60	13	23	376	41	139	16	5953
	'53	61	40	15	186	47	377	28	7	141	122	326	164	49	21	9	62	241	56	31	32	308	20	156	8	5967
	'52	58	34	19	149	56	306	21	39	139	212	427	227	20	35	19	66	256	76	24	34	285	50	179	16	6341
	'51	75	36	30	167	66	431	62	10	163	231	307	259	36	67	37	61	272	76	27	104	307	43	194	12	7206
	'50	68	28	24	132	44	436	93	6	151	96	291	165	35	39	28	63	196	61	19	48	328	29	158	11	6536
	'49	43	35	25	123	35	439	74	19	143	107	188	241	21	34	33	73	176	57	17	39	194	85	218	21	5838
	'48	68	48	29	156	47	671	65	44	219	191	385	352	38	65	63	89	474	51	19	61	300	66	234	19	7638
	'47	70	44	46	228	27	728	373	57	316	108	338	506	43	105	22	99	255	81	39	113	382	171	322	31	6766
	'46	58	28	38	201	27	574	172	37	233	64	245	282	34	48	27	79	184	56	29	80	200	71	248	29	6463
	'45	14	18	8	35	9	280	42	2	30	22	204	95	7	2	4	19	61	23	6	28	134	7	89	12	2307
	'44	6	12	8	17	5	86	16	4	16	10	91	29	3	4	5	1	17	22	3	3	80	4	47	9	1070
	'43	3		1	7	2	43	1	2	5	5	32	51		2		5	16	7	1	3	39	3	19	2	492
	'42	23	12	7	22	6	96	19	10	35	21	126	72	12	10	5	12	62	10	2	15	108	17	49	6	1581
	'41	30	7	12	34	10	254	45	7	80	32	160	138	16	12	6	28	79	16	13	16	166	18	130	9	2048
	'40	22	10	10	29	9	217	71	14	41	29	163	91	15	16	10	25	41	17	8	17	125	18	91	2	2224
	'39	27	5	12	16	7	165	47	12	31	20	89	101	3	11	8	15	26	12	4	13	50	18	86	6	1542
	'38	17	6	8	7	1	106	23	13	18	18	44	177	5	10	5	11	22	8	5	9	68	9	54	2	1238
	'37	21	5	9	40	5	185	35	15	38	29	66	116	11	13	21	10	25	9	4	9	111	16	106	9	1964
	Before '37	64	20	119	145	13	765	40	68	66	71	130	709	29	26	30	50	327	28	84	48	296	54	482	22	7273
	Unid.*	319	7	5	402	14	355	80		75	74	265	44	11	6	9	133	284	1		7	77	18	79	24	4808
	Total	1202	476	466	2573	524	7203	1361	372	2107	1752	4415	4399	457	558	349	957	3310	778	354	724	4128	785	3145	281	93817
	U.S. Total	143301	21399	31246	203250	62509	444090	249828	90234	371333	233872	149707	447274	33258	127974	76698	160059	679990	49689	23573	188084	183221	125884	216346	46911	9162444

Unid.*—Unidentified as to model year.

Data from the Reuben H. Donnelley Corp. are as of July 1, 1955.

Diesel Truck and Bus Registrations, 1952-1954

Based on data from Automobile Manufacturers Association and U. S. Bureau of Public Roads

State	Trucks 1954	Trucks 1953	Trucks 1952	State	Buses 1954	Buses 1953	Buses 1952
Alabama	520*	500*	480*	Alabama	95*	90*	90*
Arizona	5,030	3,630	3,132	Arizona	75*	70*	60*
Arkansas	1,203	933	935	Arkansas	99	65	32
California	12,564	14,217	11,783	California	2,913	2,635	2,787
Colorado	1,623	1,509	856	Colorado	250	237	230
Connecticut	413	301	254	Connecticut	520	530	499
Delaware	130*	125*	118*	Delaware	25*	20*	15*
District of Columbia	125*	120*	115*	District of Columbia	688	527	504
Florida	700*	650*	620*	Florida	275*	250*	250*
Georgia	775*	750*	740*	Georgia	275*	250*	250*
Idaho	575*	565*	540*	Idaho	100*	95*	90*
Illinois	1,850*	1,800*	1,700*	Illinois	845	1,259*	1,180*
Indiana	1,150*	1,100*	1,025*	Indiana	950*	900*	850*
Iowa	625*	600*	580*	Iowa	85*	75*	70*
Kansas	1,250*	1,236	1,184	Kansas	130*	118	132
Kentucky	225*	200*	190*	Kentucky	390*	375*	350*
Louisiana	1,400*	1,350*	1,300*	Louisiana	395*	380*	370*
Maine	223	199	134	Maine	58	56	57
Maryland	280*	250*	225*	Maryland	270*	260*	250*
Massachusetts	1,095	967	723	Massachusetts	533	359	457
Michigan	1,927	1,726	1,656	Michigan	931	878	901
Minnesota	1,050*	1,000*	975*	Minnesota	808	466	322
Mississippi	1,936	1,719	1,450	Mississippi	65	65	67
Missouri	1,385*	1,375*	1,350*	Missouri	1,150*	1,100*	1,080
Montana	693	694	655	Montana	47	57	48
Nebraska	1,400*	1,369	1,016	Nebraska	330*	322	298
Nevada	780*	775*	650*	Nevada	25*	25*	22*
New Hampshire	92	98	150*	New Hampshire	20	21	19
New Jersey	750	750	746	New Jersey	2,840	2,840	2,837
New Mexico	1,417	1,385	1,174	New Mexico	72	75	65
New York	5,200*	5,100*	5,000*	New York	6,900*	6,800*	6,700*
North Carolina	3,092	2,637	2,936	North Carolina	348	245	183
North Dakota	296	226	195	North Dakota	47	54	33
Ohio	1,183	1,378	1,075	Ohio	1,420	1,305	1 176
Oklahoma	3,100*	2,987	2,548	Oklahoma	250*	225	213
Oregon	1,650*	1,600*	1,750*	Oregon	335*	320*	300*
Pennsylvania	5,585	5,070	4,734	Pennsylvania	2,076	1,586	1,484
Rhode Island	160*	150*	125*	Rhode Island	225*	200*	190*
South Carolina	730	651	644	South Carolina	80	49	46
South Dakota	315*	306	292	South Dakota	25*	22	21
Tennessee	1,976	1,408	906	Tennessee	479	445	403
Texas	6,200*	6,000*	5,825*	Texas	600*	580*	560*
Utah	1,974	1,164	1,037	Utah	143	124	124
Vermont	82	74	44	Vermont	33	30	27
Virginia	1,250*	1,200*	1,150*	Virginia	280*	260*	250*
Washington	2,373	2,070	1,734	Washington	250	250	251
West Virginia	650*	625*	615*	West Virginia	190*	180*	175*
Wisconsin	1,100*	1,050*	1,000*	Wisconsin	500*	475*	470*
Wyoming	600*	575*	570*	Wyoming	130*	130*	125*
Total	80,902	76,164	68,636	Total	29,569	27,677	26,883

*—Estimated by Automobile Manufacturers Association.

EXPORTS

U. S. AUTOMOTIVE

U. S. Exports of New Motor Vehicles, 1920-1955

In Units and Their Value

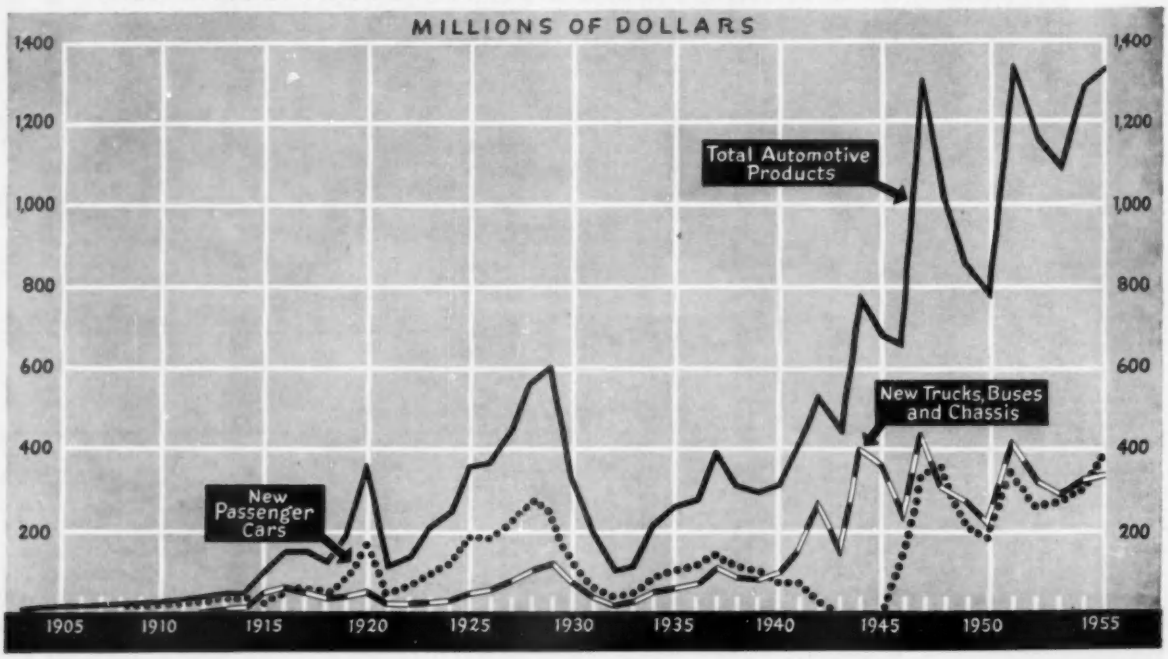
Compiled by Automotive Division, Business and Defense Services Administration, from records of the Bureau of the Census
1955 Data Compiled by Automobile Manufacturers Association, from records of the Bureau of the Census

	PASSENGER CARS			TRUCKS, BUSES AND CHASSIS			TOTAL MOTOR VEHICLES		
Year	Number	Value	% of U. S. Production (Units)	Number	Value	% of U. S. Production (Units)	Number	Value	% of U. S. Production (Units)
1920	142,508	$165,255,921	7.5	29,136	$46,775,781	9.1	171,644	$212,031,702	7.7
1921	30,950	32,533,725	2.1	7,840	10,335,893	5.3	38,790	42,869,618	2.4
1922	66,791	51,049,816	2.9	11,443	8,270,708	4.2	78,234	59,320,524	3.0
1923	127,035	90,692,272	3.5	24,859	15,317,136	6.1	151,894	106,009,408	3.7
1924	151,380	112,534,729	4.7	27,352	19,199,344	6.6	178,732	131,734,073	4.9
1925	244,306	184,885,830	6.5	58,625	37,703,402	11.0	302,931	222,589,232	7.1
1926	238,540	176,432,157	6.3	66,880	47,176,107	21.1	305,420	223,608,264	7.1
1927	278,748	207,966,456	9.5	105,447	70,123,600	22.7	384,195	278,090,056	11.2
1928†	375,428	269,393,369	9.8	140,191	93,006,070	25.8	515,619	362,399,439	11.8
1929	346,630	239,334,000	7.5	197,872	112,607,985	25.6	544,502	351,941,985	10.1
1930	159,464	110,355,978	5.7	85,666	56,861,119	14.9	245,130	167,217,097	7.3
1931	86,437	52,851,585	4.3	42,415	26,210,975	11.8	135,852	79,062,560	5.6
1932	44,282	25,502,047	3.8	25,532	12,142,681	10.8	69,814	37,644,728	5.1
1933	67,355	33,945,464	4.2	44,103	20,691,338	12.7	111,458	54,636,802	5.8
1934	148,387	80,604,563	6.8	93,766	45,125,359	16.3	242,153	125,729,922	3.7
1935	179,470	99,342,411	5.5	100,668	51,995,938	14.4	280,138	151,338,349	7.0
1936	186,542	107,483,285	5.1	108,167	56,765,713	13.7	294,709	164,248,998	6.6
1937	237,719	140,638,203	6.0	169,076	102,889,939	18.9	406,795	243,528,142	8.4
1938	167,693	104,628,982	8.4	117,943	74,451,986	24.1	285,636	179,080,968	11.4
1939	143,909	87,171,300	5.0	116,913	71,422,015	16.4	260,822	158,593,315	7.2
1940	88,806	57,253,737	2.6	103,459	87,867,077	13.7	192,265	145,120,814	4.5
1941	81,746	60,702,648	2.4	147,132	148,149,880	13.9	228,878	208,852,528	5.0
1942	13,951	13,199,744	‡	156,344	258,241,298	19.1	170,295	271,441,042	...
1943	2,088	2,420,506	‡	74,847	145,772,105	10.7	76,935	148,192,611	...
1944	1,649	2,784,433	‡	175,080	399,795,242	23.8	176,729	402,579,675	...
1945	1,206	1,447,376	1.7	142,338	348,327,144	21.7	143,544	349,774,520	19.8
1946	116,994	122,500,568	5.4	167,980	225,929,505	17.8	284,974	348,430,073	9.2
1947	266,795	335,330,528	7.5	267,589	429,755,475	21.6	534,384	765,086,003	11.1
1948	217,911	279,837,012	5.6	204,831	343,160,170	14.8	422,742	709,592,487	8.0
1949	140,186*	205,022,791	2.7	133,963*	228,147,610	11.9	274,149*	433,170,401	4.4
1950	120,285	179,324,979	1.8	130,176	216,029,884	9.7	250,461	395,354,863	3.1
1951	216,973	340,031,796	4.1	216,692	409,290,971	15.2	433,665	749,322,767	6.4
1952	141,026	243,976,057	3.3	155,461	313,753,917	12.8	296,487	557,729,974	5.4
1953	154,459	276,020,378	2.5	133,550	264,048,957	11.1	288,009	540,069,335	3.9
1954	173,312	300,861,719	3.1	183,460	332,513,423	17.6	356,772	633,375,142	5.4
1955	211,182	380,028,305	2.7	174,680	339,726,577	14.0	386,973	726,111,210	4.2

‡—Taken from stockpiles. †—From 1928 through 1941 exports include shipments in non-contiguous territories. *—Does not include military vehicles for last six months of 1949.

NOTE—Prior to 1931 figures include used vehicles, but the effect of these used vehicles on per cent of production is negligible.

1955 TOTAL AUTOMOTIVE EXPORTS WORTH $1.369 BILLION



U. S. Engine Exports, *Except Automotive*

As reported by the Bureau of the Census

Type of Engine	1954 Number	1954 Value	1953 Number	1953 Value
Gasoline				
Outboard Motors	22,030	$3,987,873	17,478	$2,937,546
Marine	2,685	1,757,127	2,690	1,805,486
Tractors, etc., not over 10 hp	90,010	4,045,087	81,792	4,413,559
Tractors, etc., 10-50 hp	10,800	2,813,722	18,521	4,608,923
Tractors, etc., over 50 hp	6,936	2,457,852	11,030	3,758,397
Diesel and Semi-Diesel				
Marine, not over 200 hp	1,360	$5,279,575	981	$3,488,081
Marine, 201-500 hp	497	3,292,819	180	1,582,163
Marine, 501 and over	45	2,315,267	43	2,930,111
Tractors, etc., under 200 hp.	5,172	11,195,507	6,276	11,373,337
Tractors, etc., 200-500 hp	451	3,660,955	442	3,296,969
Tractors, etc., 501 and over	244	9,639,012	222	8,771,289
All Other Engines, n.e.c.	11,718	$2,654,150	12,409	$2,446,181
Total—All Engines	151,948	$53,098,946	152,069	$51,412,042

U. S. Exports of New Trucks and Chassis

By Gross Vehicle Weights

G.V.W.	1955 Number	1955 Value	1954 Number	1954 Value
Gasoline				
5,000 lb. and under	54,106	$68,577,382	69,326	$80,051,890
5,001-10,000 lb.	39,022	59,593,083	29,814	44,505,078
10,001-14,000 lb.	6,443	10,596,493	6,410	10,138,299
14,001-16,000 lb.	31,628	57,853,968	46,872	81,970,770
16,001-19,500 lb.	24,203	53,327,170	13,410	35,160,520
19,501 lb. and over	10,877	48,948,956	11,090	45,393,779
Diesel and Semi-Diesel				
19,500 lb. and under	253	$1,078,367	307	$928,145
Over 19,500 lb.	1,671	17,568,890	1,690	17,666,939
Total—All Trucks	168,203	$317,544,309	183,460	$332,513,423

U. S. Exports of Automotive Products, 1953-1955

Vehicles, Engines, Parts and Equipment

1955 Data Compiled by Automobile Manufacturers Association, from records of Bureau of the Census

All Other Years by Automotive Industries, from records of the Bureau of the Census

	1955 Number	1955 Value	1954 Number	1954 Value	1953 Number	1953 Value
VEHICLES						
Passenger Cars and Chassis, New	211,182	$380,028,305	173,312	$300,861,719	154,459	$276,020,378
Passenger Cars and Chassis, Used	6,663	6,671,088	5,134	6,424,726	4,282	6,302,157
Trucks, Buses and Chassis, New	174,680	339,726,577	183,460	332,513,423	133,550	264,048,957
Trucks, Buses and Chassis, Used	3,816	6,463,470	3,609	5,333,720	5,952	5,318,698
Special Purpose Vehicles, New	1,111	6,356,328	1,190	5,654,014	885	4,536,520
Special Purpose Vehicles, Used	313	674,410	160	323,794	136	240,794
Trailers	5,050	12,050,606	4,154	8,854,236	5,655	12,085,207
Motorcycles	1,205	1,038,424	1,378	1,112,212	1,443	1,129,932
Total—New and Used Vehicles	404,020	$753,009,208	372,397	$661,077,844	306,362	$569,682,643
ENGINES						
Diesel, truck and bus, for assembly			25	$47,649	335	$450,263
Gasoline, truck and bus, for assembly	24,495	$6,981,716	6,961	2,780,366	18,730	4,515,223
Passenger car, for assembly			9,581	1,453,925	33,390	4,501,110
Diesel, for replacement			1,045	2,283,098	719	1,461,859
Gasoline, for replacement	23,563	8,321,678	16,506	4,402,856	24,443	7,848,851
Total—Engines	48,058	$15,303,394	34,118	$10,967,894	77,617	$18,777,306
PARTS FOR ASSEMBLY						
Bodies, truck and bus	6,515	$5,181,242	5,025	$3,680,529	5,628	$4,028,781
Bodies, passenger car	559	170,845	159	60,024	365	136,362
Parts for cars, trucks, buses	....	208,587,177	....	149,703,879	....	183,305,589
Total—Parts for Assembly	....	$213,939,264	....	$153,444,432	....	$187,470,732
REPLACEMENT PARTS						
Trailer parts	....	$3,279,704	....	$2,171,337	....	$3,199,013
Motorcycle parts	....	453,511	....	727,366	....	677,552
Bodies, truck and bus	1,290	889,509	1,127	825,058	1,359	761,809
Bodies, passenger car	....	.....	57	14,721	95	23,901
Springs, knee action	....	.....	1,031,886	218,625	1,813,460	427,310
Springs, leaf and leaves	....	3,813,674	....	4,487,537	....	3,618,372
Shock absorbers and parts	....	4,016,052	....	3,771,904	....	3,243,796
Instruments for motor vehicles	....	925,209	....	974,405	....	775,748
Motor vehicle parts, n.e.c.	....	212,683,172	....	180,053,432	....	157,716,907
Heaters, air conditioners & parts	....	2,464,535	....	2,070,900	....	2,233,057
Accessories and parts, n.e.c.	....	5,916,238	....	4,846,411	....	5,667,663
Batteries, 6 and 12 volt	403,600	5,516,242	409,150	5,839,403	406,916	6,603,430
Spark plugs	23,367,122	6,978,885	18,203,345	5,441,072	12,408,577	3,712,760
Starting lighting and ignition equipment	....	26,760,451	....	24,610,094	....	24,644,062
Clutch facings	....	5,922,912	....	879,458	....	900,725
Brake lining	....		....	4,620,416	....	4,267,736
Total—Replacement Parts	....	$279,620,094	....	$241,552,142	....	$218,473,841
GARAGE EQUIPMENT						
Service appliances and parts	.....	$13,334,736	....	$11,402,915	....	$10,389,873
Pumps, gasoline and oil	25,203	5,456,658	19,583	4,808,591	13,391	2,919,110
Lubrication equipment and parts	....	5,865,565	....	4,901,723	....	4,855,207
Total—Garage Equipment	....	$24,656,959	....	$21,113,229	....	$18,164,190
TIRES AND TUBES						
Casings truck and bus	....		746,477	$33,554,004	742,560	$36,871,485
Casings, car and motorcycle	....		886,865	11,244,975	787,548	9,804,218
Tubes, inner, for passenger cars	....	$74,814,648	334,708	665,430	349,058	* 681,918
Tubes, inner, for truck and bus	....		493,076	1,983,985	467,718	2,423,433
Tires, solid and cushion	....		92,931	407,147	28,593	446,014
Camelback	....	.....	....	2,329,813	....	2,339,553
Sundries and repair material	....	7,298,957	....	3,477,335	....	3,314,757
Total—Tires and Tubes	....	$82,113,605	....	$53,662,689	....	$55,881,378
Total—All Products	....	$1,368,642,524	....	$1,141,818,230	....	$1,068,450,090

U. S. Passenger Car Engine Trends

Average Car Weight and Engine Hp.

Based on Number of Units Sold

	No. of Units Sold*	Gross Shipping Wgt. of Cars Sold (lb.)†	Gross Max. Hp. of Cars Sold‡	Average Weight (lb.)	Average Hp.
1930	2,625,979	7,320,000,000	142,800,000	2,780	54
1931	1,908,141	5,380,000,000	109,200,000	2,820	57
1932	1,096,399	3,200,000,000	75,400,000	2,920	69
1933	1,493,794	4,220,000,000	106,000,000	2,820	71
1934	1,888,557	5,560,000,000	156,000,000	2,940	83
1935	2,743,908	8,120,000,000	234,000,000	2,960	85
1936	3,404,497	10,190,000,000	291,000,000	3,000	86
1937	3,483,752	10,470,000,000	303,900,000	3,006	87
1938	1,891,021	5,743,000,000	169,200,000	3,035	89
1939	2,653,377	7,950,000,000	239,200,000	2,996	90
1940	3,415,905	10,511,000,000	312,100,000	3,077	91
1941	3,731,186	11,793,000,000	356,800,000	3,161	96
1946	1,815,196	599,600,000	181,200,000	3,303	100
1947	3,167,231	10,529,700,000	317,400,000	3,324	100
1948	3,490,952	11,582,200,000	352,800,000	3,309	100
1949	4,838,342	15,901,000,000	500,100,000	3,286	104
1950	6,326,438	20,624,200,000	660,400,000	3,260	104
1951	5,060,903	16,491,568,000	541,970,081	3,259	107
1952	4,158,394	13,626,614,000	487,487,469	3,348	112
1953	5,738,989	19,208,005,555	690,604,332	3,436	131
1954	5,535,464	18,706,481,077	749,762,007	3,380	135
1955	7,169,908	24,406,699,004	1,202,887,133	3,404	168

† Shipping weight of 5 passenger, 4 door sedan taken as typical and used in conjunction with new registrations of each model.

‡ Maximum horsepower taken from previous Statistical Issues and used in conjunction with new registrations of each model.

* R. L. Polk & Co. registrations of new passenger cars.

Progress in Engine Design

Average for Passenger Car Engines—Based on Number of Chassis Models Offered for Years 1930-1952 Based on Engine Models for 1953-1956

	Average Piston Speeds (Ft. per Min.)	Average Displacement per Cylinder (Cu. In.)	Average Number of Cylinders	Average R.P.M. at Max. B.H.P.	Average Brake Horsepower
1931	2395	36.9	7.49	3230	95.0
1932	2390	36.7	7.79	3290	101.6
1933	2463	36.0	7.66	3360	106.5
1934	2506	36.2	7.97	3420	112.5
1935	2535	36.1	7.51	3480	109.8
1936	2498	35.6	7.59	3487	110.1
1937	2554	35.8	7.74	3556	115.9
1938	2545	35.7	7.60	3576	111.7
1939	2498	35.1	7.26	3543	105.9
1940	2490	35.0	7.25	3580	107.9
1941	2492	35.2	7.15	3603	110.9
1942	2534	34.9	7.20	3638	112.5
1946	2522	35.4	6.97	3682	108.4
1947	2550	35.8	7.00	3660	109.4
1948	2492	35.6	6.95	3629	107.9
1949	2522	36.8	6.80	3690	113.3
1950	2505	37.2	6.88	3657	116.6
1951	2505	36.8	6.80	3758	118.0
1952	2523	36.6	6.87	3823	122.8
1953	2560	36.1	6.69	3869	125.0
1954	2589	36.8	6.78	3953	140.8
1955	2585	36.7	7.40	4284	173.8
1956	2634	39.6	7.51	4353	207.9

	Average Hp. per Cu. In. of Displacement	Average Compression Ratio	Average B. M. E. P. at Maximum Hp. (lb. per sq. in.)	Bore, Stroke and Displacement Bore (In.)	Stroke (In.)	Disp. (Cu. In.)
1931	.344	5.23	84.3	3.21	4.45	273.0
1932	.353	5.29	86.2	3.26	4.41	283.9
1933	.376	5.57	88.5	3.23	4.40	284.1
1934	.388	5.72	90.1	3.24	4.40	289.2
1935	.398	5.98	90.2	3.23	4.39	271.4
1936	.411	6.14	92.3	3.39	4.32	267.9
1937	.417	6.25	93.1	3.25	4.31	277.8
1938	.412	6.32	91.2	3.28	4.27	271.1
1939	.415	6.32	92.7	3.24	4.23	255.3
1940	.426	6.41	93.9	3.28	4.17	254.6
1941	.431	6.63	96.7	3.26	4.15	252.1
1942	.448	6.60	98.5	3.26	4.18	251.8
1946	.440	6.77	94.8	3.27	4.11	246.4
1947	.437	6.73	94.5	3.28	4.18	250.4
1948	.437	6.78	95.3	3.29	4.12	247.1
1949	.453	6.93	97.3	3.35	4.10	250.0
1950	.458	7.00	98.6	3.37	4.11	256.1
1951	.474	7.09	99.5	3.40	4.00	250.4
1952	.488	7.14	101.4	3.39	3.96	251.8
1953	.518	7.31	106.0	3.40	3.97	241.4
1954	.564	7.31	113.1	3.46	3.93	249.8
1955	.639	7.87	118.1	3.62	3.57	271.8
1956	.691	8.47	127.2	3.72	3.63	297.2



1956 PASSENGER CARS

PRICE • WEIGHT • BODIES

Following are prices at factory for cars with standard equipment as of February 26, 1956. State or local taxes, transportation and finance charges and optional equipment are extra.

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
AMERICAN MOTORS CORP.				
HUDSON				
Wasp				
Super Sed., 4d	2179	201	2380	3264
Hornet-6				
Super Sed., 4d	2504	225	2729	3545
Cust. Sed., 4d	2737	241	2978	3636
Cust. H. T., 2d	2846	249	3095	3646
Hornet-V8				
Cust. Sed., 4d	2986	259	3215	3862
Cust. H. T., 2d	3119	269	3388	3872
METROPOLITAN*				
Hardtop	.....	.....	1445	1825
Convertible	.....	.....	1469	1785
NASH				
Statesman 6				
Super Sed., 4d	2146	199	2345	3199
Ambass. 6				
Super Sed., 4d	2425	219	2644	3555
Ambass. V8				
Super Sed., 4d	2716	240	2956	3748
Cust. Sed., 4d	2939	256	3195	3846
Cust. Hd. Top	3072	266	3338	3854
RAMBLER-6				
DeL. Sed., 4d	1642	153	1795	2891
Super Sed., 4d	1743	162	1905	2906
Cust. Sed., 4d	1854	171	2025	2929
Cust. Hd. Top	2008	182	2190	2990
Cus. Sta. Wgn.	2106	189	2295	3110
CHRYSLER CORP.				
CHRYSLER‡				
Windsor				
Sedan, 4d	2565	205	2770	3900
Nassau, 2d	2597	207	2804	3910
Newport, 2d	2724	217	2941	3920
Newport, 4d	2805	223	3028	3990
Conv. Coupe	2998	237	3235	4100
Twn. & Cty.	3242	256	3498	4290
New Yorker				
Sedan, 4d	3402	271	3673	4110
Newport, 2d	3562	283	3845	4175
St. Regis	3603	286	3889	4175
Newport, 4d	3702	293	3995	
Conv. Coupe	3833	303	4136	4360
Twn. & Cty.	4094	323	4417	4460
300B				
Sport Coupe	3997	315	4312	4145
DE SOTO‡				
Firedome				
Sedan, 4d	2393	194	2587	3855
Seville, 2d	2445	198	2643	3865
Seville, 4d	2537	205	2742	3940
Sportsman, 2d	2557	207	2764	3910
Sportsman, 4d	2649	214	2863	3920
Conv. Cpe.	2768	223	2991	4090
Sta. Wagon	3037	243	3280	4230
Fireflite				
Sedan, 4d	2803	226	3029	4005
Sportsman, 2d	3014	242	3256	4030
Sportsman, 4d	3093	248	3341	4015
Conv. Cpe.	3198	256	3454	4125
Pace Car	3264	261	3525	.....
Adventurer	3369	269	3638	.....
DODGE‡				
Coronet, 6				
Club Sedan, 2d	1961	160	2121	3250
Sedan, 4d	2029	165	2194	3295
Coronet, V8				
Club Sedan	2061	167	2228	3380
Sedan, 4d	2129	172	2301	3435
Lancer	2187	177	2364	3430
Lancer, 4d	2293	185	2478	.....
Convertible	2410	194	2604	3600
Royal, V8				
Sedan, 4d	2257	182	2439	3475
Lancer	2322	187	2509	3505
Lancer, 4d	2428	195	2623	.....
Cust. Royal				
Sedan, 4d	2359	190	2539	3520
Lancer	2424	195	2619	3505
Lancer, 4d	2530	203	2733	.....
Convertible	2628	210	2838	3830
Sta. Wagons				
Suburban, 6 cyl.	2237	180	2417	3455
Suburban, 8 cyl.	2337	188	2525	3605
Sierra, 6 p.	2446	196	2642	3725
Cust. Suburb	2457	197	2654	.....
Sierra, 8p	2544	204	2748	.....
Cust. Sier., 6p	2587	207	2794	3710
Cust. Sier., 8p	2685	215	2900	3800

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
CHRYSLER CORP. cont'd				
IMPERIAL				
Sedan, 4d	4381	344	4725	4565
Southampt. 2d	4625	362	4987	4530
Southampt. 4d	4747	372	5119	4580
Crown Imp.				
Sedan, 4d	6945	521	7466	5145
Limousine	7070	530	7600	5205
PLYMOUTH‡				
Plaza 6				
Bus. Coupe	1591	132	1726	3030
Club Sedan	1686	139	1825	3100
Sedan, 4d	1726	142	1868	3145
Savoy 6				
Club Sedan	1778	146	1924	3125
Sedan, 4d	1818	149	1967	3160
Sport Cpe.	1915	156	2071	3155
Belvedere 6				
Club Sedan	1856	152	2008	3125
Sedan, 4d	1896	155	2051	3170
Spt. Coupe	1993	162	2155	3165
Spt. Sedan	2056	167	2223	3270
Suburban 6				
De Luxe, 2d	1977	161	2138	3285
Custom, 2d	2013	166	2209	3355
Custom, 4d	2086	169	2255	3375
Sport, 4d	2244	181	2425	3420
Plaza 8				
Bus. Coupe	1690	139	1829	3170
Club Sedan	1782	146	1928	3250
Sedan, 4d	1822	149	1971	3275
Savoy 8				
Club Sedan	1874	153	2027	3255
Sedan, 4d	1914	156	2070	3295
Spt. Coupe	2011	163	2174	3275
Belvedere 8				
Club Sedan	1952	159	2111	3285
Sedan, 4d	1992	162	2154	3325
Spt. Coupe	2089	169	2258	3320
Spt. Sedan	2152	174	2326	3415
Conv. Coupe	2238	181	2419	3435
Suburban 8				
De Luxe, 2d	2073	168	2241	3460
Custom, 2d	2139	173	2312	3500
Custom, 4d	2182	176	2358	3565
Sport, 4d	2340	188	2528	3605
Fury 8				
Sport Coupe	2599	208	2807	3650
FORD MOTOR CO.				
CONTINENTAL				
Hardtop, 2d	4800	.....	.....	4825
FORD				
Mainline 6				
Bus. Tudor	1562	.....	.....	3087
Tudor Sedan	1657	.....	.....	3032
Fordor Sedan	1699	.....	.....	3127
Customline 6				
Tudor Sedan	1743	.....	.....	3107
Fordor Sedan	1785	.....	.....	3147
Fairlane 6				
Tudor Sedan	1829	.....	.....	3107
Fordor Sedan	1871	.....	.....	3147
Victoria, 2d	1965	.....	.....	3202
Crwn. Victoria	2099	.....	.....	3217
Sunliner	2119	.....	.....	3312
Crn. Vict. Trnsp.	2164	.....	.....	3227
Sta. Wgns. 6				
Ranch Wagon	1956	.....	.....	3330
Cust. Ranch	2016	.....	.....	3345
Ctry. Sed., 6p	2060	.....	.....	3420
Ctry. Sed., 8p	2183	.....	.....	3485
Parklane	2183	.....	.....	3360
Ctry. Squire	2280	.....	.....	3495
Mainline, V8				
Bus. Tudor	1655	.....	.....	3198
Tudor Sedan	1750	.....	.....	3143
Fordor Sedan	1792	.....	.....	3238
Customline V8				
Tudor Sedan	1836	.....	.....	3218
Fordor Sedan	1878	.....	.....	3258
Fairlane V8				
Tudor Sedan	1922	.....	.....	3250
Fordor Sedan	1964	.....	.....	3290
Victoria, 2d	2058	.....	.....	3345
Crwn. Victoria	2193	.....	.....	3360
Sunliner	2212	.....	.....	3455
Crn. Vict. Trnsp.	2257	.....	.....	3370
Sta. Wgns. V8				
Ranch	2049	.....	.....	3473
Cust. Ranch	2109	.....	.....	3488
Ctry. Sed., 6p.	2153	.....	.....	3563
Ctry. Sed., 8p.	2276	.....	.....	3628

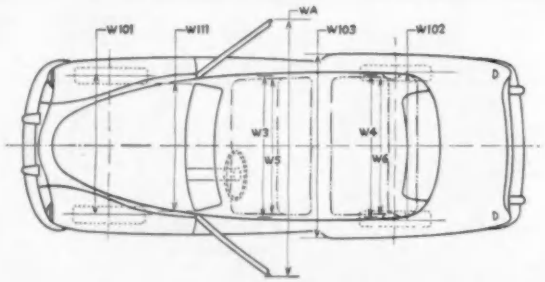
BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
FORD MOTOR CO. cont'd				
FORD, Cont'd				
Parklane	2276	.....	.....	3503
Ctry. Squire	2373	.....	.....	3638
Thunderbird				
Convertible	2842	.....	.....	3038
LINCOLN				
Capri				
Sport Coupe	3735	.....	.....	4289
Sedan, 4d	3821	.....	.....	4289
Premiere				
Coupe	4183	.....	.....	4362
Sedan, 4d	4183	.....	.....	4362
Convertible	4318	.....	.....	4362
MERCURY				
Custom				
Med. Sed., 2d	2012	.....	.....	3430
Sedan, 2d	2102	.....	.....	3505
Sedan, 4d	2157	.....	.....	3520
Coupe, 2d	2227	.....	.....	3560
Sta. Wagon, 6p	2447	.....	.....	3790
Sta. Wagon, 8p	2537	.....	.....	3860
Monterey				
Sedan, 4d	2292	.....	.....	3570
Coupe, 2d	2362	.....	.....	3590
Sport Sed., 4d	2382	.....	.....	3550
Sta. Wagon, 8p	2684	.....	.....	3885
Montclair				
Coupe, 2d	2487	.....	.....	3620
Sport Sed., 4d	2507	.....	.....	3610
Convertible	2612	.....	.....	3725
GENERAL MOTORS CORP.				
BUICK				
Special 40				
Sedan, 2d	2111	202	2313	3750
Sedan, 4d	2166	206	2372	3790
Riviera, 2d	2204	209	2413	3775
Riviera, 4d	2270	214	2484	3860
Conv. Cpe.	2467	229	2696	3880
Est. Wagon	2500	231	2731	3945
Century 60				
Riviera, 2d	2660	258	2918	3890
Riviera, 4d	2717	263	2980	4000
Est. Wagon	2932	279	3211	4080
Conv. Cpe.	2979	282	3261	4045
Super 50				
Riviera, 2d	2884	275	3159	4140
Sedan, 4d	2927	278	3205	4200
Riviera, 4d	3010	285	3295	4265
Conv. Cpe.	3200	299	3499	4340
Roadmstr. 70				
Sedan, 4d	3148	310	3458	4280
Riviera, 2d	3230	316	3546	4235
Riviera, 4d	3324	323	3647	4355
Conv. Cpe.	3335	324	3659	4395
CADILLAC				
Series 62				
Coupe	3569	313	3882	4356
Sedan	3658	319	3977	4370
Coupe de Ville	3964	341	4305	4427
Convertible	4097	351	4448	4627
Eldorado	5814	472	6286	4809
Series 60				
Sedan	4342	396	4738	4540
Series 75				
Fltwd. Sedan	5695	492	6187	5015
Fltwd. Imper.	5895	507	6402	.....
CHEVROLET				
One-Fifty, 6cyl.				
Util. Sedan	1550	150	1700	3120
Sedan, 2d	1635	157	1792	3155
Sedan, 4d	1675	160	1835	3195
Sta. Wagon, 2d	1955	182	2137	3335
Two-Ten, 6 cyl.				
Sedan, 2d	1715	163	1878	3185
Sedan, 4d	1755	166	1921	3220
Delray Cpe.	1770	167	1937	3185
Sport Cpe.	1855	174	2029	3225
Sport Sed., 4d	1905	178	2083	3285
Sta. Wagon, 2d	1995	186	2181	3355
Sta. Wagon, 4d	2040	189	2229	3405
Sta. Wag. 4d, 9p	2120	194	2314	3450
Bel Air, 6 cyl.				
Sedan, 2d	1820	171	1991	3195
Sedan, 4d	1860	174	2034	3235
Sport Cpe.	1960	182	2142	3225
Sport Sed., 4d	2010	186	2196	3290
Convertible	2115	195	2310	3350
Sta. Wagon, 4d	2245	203	2448	3475
Sta. Wagon, 2d	2360	214	2574	3425
One-Fifty, 8cyl.				
Util. Sedan	1642	157	1799	3095

BODY MAKE AND MODEL	List Price at Factory without Federal Taxes	Federal Taxes and Handling Charges	Delivered Price at Factory including Federal Taxes	Shipping Weight
GENERAL MOTORS, cont'd				
CHEVROLET, Cont'd				
Sedan, 2d	1727	164	1891	3130
Sedan, 4d	1767	167	1934	3170
Sta. Wagon, 2d	2047	189	2236	3310
Two-Ten, 8 cyl.				
Sedan, 2d	1807	170	1977	3160
Sedan, 4d	1847	173	2020	3195
Delray Cpe.	1862	174	2036	3160
Sport Cpe.	1947	181	2128	3200
Sport Sedan	1997	185	2182	3260
Sta. Wagon, 2d	2067	193	2280	3330
Sta. Wagon, 4d	2132	196	2328	3380
Sta. Wagon, 9p	2212	201	2413	3425
Bel Air, 8 cyl.				
Sedan, 2d	1912	178	2090	3170
Sedan, 4d	1952	181	2133	3210
Sport Cpe.	2052	189	2241	3200
Sport Sed.	2102	193	2295	3265
Convertible	2207	202	2409	3325
Sta. Wagon, 4d	2337	210	2547	3450
Sta. Wagon, 2d	2452	221	2673	3400
Corvette				
Convertible	.....	.....		2870
OLDSMOBILE				
Series 88				
Sedan, 2d	2166	.....	.....	3691
Sedan, 4d	2226	.....	.....	3748
Holiday Cpe.	2330	.....	.....	3741
Holiday Sed.	2397	.....	.....	3797
Super 88				
Sedan, 2d	2301	.....	.....	3691
Sedan, 4d	2363	.....	.....	3768
DeL. Hol. Cpe.	2520	.....	.....	3771
DeL. Hol. Sed.	2586	.....	.....	3869
Conv. Coupe	2726	.....	.....	4033
Series 98				
Sedan, 4d	2969	.....	.....	4028
DeL. Hol. Cpe.	3138	.....	.....	4080
DeL. Hol. Sed.	3204	.....	.....	4167
Conv. Cpe.	3380	.....	.....	4325
PONTIAC				
Chieftain 860				
Sedan, 2d	2006	195	2201	3436
Sedan, 4d	2060	199	2259	3496
Catal. Cpe.	2127	204	2331	3496
Catal. Sedan	2195	209	2404	3561
Sta. Wagon, 2d	2311	218	2529	3596
Sta. Wagon, 4d	2389	224	2613	3691
Chieftain 870				
Sedan, 4d	2167	207	2374	3496
Catal. Cpe.	2229	212	2441	3496
Catal. Sedan	2279	216	2495	3561
Sta. Wagon, 4d	2478	231	2709	3641
Star Chief 8				
Sedan, 4d	2273	215	2488	3561
Cust. Cat. Cpe.	2401	225	2626	3551
Cust. Cat. Sed.	2466	230	2696	3631
Conv. Coupe	2579	239	2818	3781
Cust. Sta. Wgn.	2831	258	3089	3626
STUDE.-PACK. CORP.				
CLIPPER				
Sedan, DeL., 4d	2505	226	2731	3955
Sedan, Sup. 4d	2631	235	2866	4010
Hardtop, Sup.	2677	239	2916	4035
Sedan, Cus. 4d	2820	249	3069	4070
Constellation	2908	256	3164	4070
PACKARD				
Patrician	3826	334	4160	4255
Packard 400	3855	335	4190	4290
Caribbean	5069	426	5495	4590
Carib. Conv.	5534	461	5995	4960
STUDEBAKER				
Champion				
Sedanet, 2d	1678	163	1841	2780
Sedan, 2d	1772	171	1943	2800
Sedan, 4d	1819	174	1993	2835
Commander				
Sedanet, 2d	1792	178	1970	3085
Sedan, 2d	1886	186	2072	3110
Sedan, 4d	1931	190	2121	3140
President				
Sedan, 2d	1989	195	2184	3180
Sedan, 4d	2033	198	2231	3210
Classic, 4d	2268	217	2485	3295
Sta. Wgns.				
Pelham	2038	191	2229	3000
Parkview	2144	206	2350	3300
Pinehurst	2306	219	2525	3395
Hawk				
Flight	1809	173	1982	2780
Power	1909	188	2097	3095
Sky	2257	216	2473	3215
Golden	2800	257	3057	3360

‡ Prices do not include delivery and handling charges.

* F. O. B. coastal port of entry.

WIDTH DIMENSIONS



1956 PASSENGER CAR BODY DATA

All dimensions apply to 5 or 6 passenger, 4-door sedan or equivalent model.

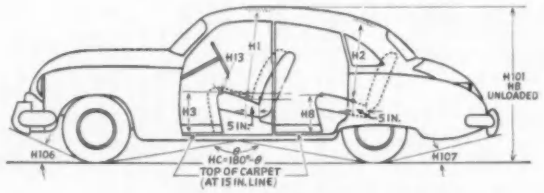
PASSENGER CAR MAKE AND MODEL	MISCELLANEOUS								GENERAL DIMENSIONS (Ins.)										
	Doors Hinged								L101	Overhang		Tread		Overall Dimensions				W111
										L104	L105	W101	W102	L103	W103	WA	HB	
	Front Door	Rear Door	Type of Finish	Hood Opening	Hood Counterbalanced	Hood Release Control	Windshield Type	Rear Window Type	Wheelbase	Front—Including Bumper Guards	Rear—Including Bumper Guards	Front	Rear	Length—Bumper to Bumper	Width	Width—Doors Open	Height—Unloaded	Windshield—Max Width
AMERICAN MOTORS CORP.																		
Hudson Wasp 3564O	F	F	E	Ff	Y	Ex	C	C	114.3	34.9	53.1	59.5	59.7	202.3	78.0	148.3	63.3	62.3
Hornet 3566O	F	F	E	Ff	Y	Ex	C	C	121.3	34.9	53.1[1]	59.5	60.5	209.3[2]	78.0	148.3	63.8[3]	62.3
Hornet 3568O	F	F	E	Ff	Y	Ex	C	C	121.3	34.9	53.1[1]	59.5	60.5	209.3[2]	78.0	148.3	63.9	62.3
Metropolitan 561, 562	F	N	E	F		Ex	1F	3C	85.0			45.3	44.8	149.5	61.5		54.5	
Nash Statesman 5640	F	F	E	Ff	Y	Ex	C	C	114.3	34.9	53.1	56.6	59.7	202.3	78.0	148.3	63.3	62.3
Ambassador 5660	F	F	E	Ff	Y	Ex	C	C	121.3	34.9	53.1	56.6	60.5	209.3	78.0	148.3	63.3[3]	62.3
Ambassador 5680	F	F	E	Ff	Y	Ex	C	C	121.3	34.9	53.1[1]	56.6	60.5	209.3[2]	78.0	148.3	63.9	62.3
Rambler 5610	F	F	E	Ff	Y	Ex	C	C	108.0	32.0	51.2[4]	57.8	58.0	191.1[5]	71.3	145.0	59.4	59.8
CHRYSLER CORP.																		
Chrysler Windsor C-71	F	F	E	Ff	Y	Ex	C	C	126.0	37.0	56.9	60.4	59.6	219.9	78.8	153.0	62.7	62.0
New Yorker C-72	F	F	E	Ff	Y	Ex	C	C	126.0	38.3	56.9	60.4	59.6	221.2	81.0	153.0	62.9	62.0
300BC-72-300	F	F	E	Ff	Y	Ex	C	C	126.0	36.8	59.9	60.4	59.6	222.7	78.8	165.5	60.6	62.0
De Soto Firedome S-23, Fireflite S-24	F	F	E	Ef	Y	Ex	C	C	126.0	36.6	55.3	60.4	59.6	217.9	78.3	153.0	62.7	62.0
Dodge Coronet D-62-1	F	F	E	Ff	Y	Ex	C	C	120.0	38.7	53.3	58.9	59.2	212.0	74.6	151.4	62.3	59.5
Coronet D-63-1, Royal D-63-2	F	F	E	Ff	Y	Ex	C	C	120.0	38.7	53.3	58.9	59.2	212.0	74.6	151.4	62.5	59.5
Custom Royal D-63-3	F	F	E	Ff	Y	Ex	C	C	120.0	38.7	53.3	58.9	59.2	212.0	74.6	151.4	62.7	59.5
Imperial Crown Imperial C-70	F	F	E	Ff	Y	Ex	C	C	149.5	38.1	56.0	61.3	60.8	243.6	79.1	153.0	63.8	62.0
Imperial C-73	F	F	E	Ff	Y	Ex	C	C	133.0	38.1	56.5	61.3	60.4	229.6	78.8	160.0	63.1	62.0
Plymouth Plaza, Savoy, Bel. P-26, P-29	F	F	E	Ff	Y	Ex	C	C	115.0	35.8	54.0	58.4	58.5	204.8	74.6	151.4	62.2	59.5
Fury P-29-3	F	F	E	Ff	Y	Ex	C	C	115.0	35.8	54.0	58.8	58.9	204.8	74.6	165.7	60.4	59.5
FORD MOTOR CO.																		
Continental 60-A	F	N	L	F	Y	Ex	C	C	126.0	32.3	57.2	56.5	60.0	218.4	77.5	166.8	57.1	59.3
Ford Mainline, Cust'line, Fairlane 6, 8	F	F	E	Ff	Y	Ex	C	C	115.5	33.9	49.1	56.0	56.0	198.5	75.9	148.9	62.1	59.5
Thunderbird 40-A, 40-B	F	N	E	Rf	N	In	C	C	102.0	27.6	55.6	56.0	56.0	185.1	71.3	148.9	50.2[6]	56.6
Lincoln Premiere 73-A, Capri 73-B	F	F	E	Ff	Y	Ex	C	C	126.0	34.9	61.9	58.5	60.0	222.8	79.9	151.0	61.2	61.7
Mercury Custom, Monterey 8	F	F	E	Ff	Y	Ex	C	C	119.0	34.4	53.0	58.0	59.0	206.4	76.4	148.9	62.4	59.5
Montclair 8	F	F	E	Ff	Y	Ex	C	C	119.0	34.4	53.0	58.0	59.0	206.4	76.4	148.9	60.5	59.5
GENERAL MOTORS CORP.																		
Buick Special 40	F	F	L	Ff	Y	Ex	C	C	122.0	33.4	49.6	59.0	59.0	205.1	75.5	145.8	62.0	61.0
Super 50	F	F	L	Ff	Y	Ex	C	C	127.0	33.2	53.5	59.0	62.2	213.6	80.0	147.8	64.1	61.0
Century 60	F	F	L	Ff	Y	Ex	C	C	122.0	33.4	49.6	59.0	59.0	205.1	75.5	145.8	61.4	61.0
Roadmaster 70	F	F	L	Ff	Y	Ex	C	C	127.0	33.2	53.5	59.0	62.2	213.6	80.0	147.8	64.4	61.0
Cadillac 60	F	F	L	F	Y	Ex	C	C	133.0	34.2	58.7	60.0	63.2	225.9	80.1	152.4	64.1	61.0
62	F	F	L	F	Y	Ex	C	C	129.0	34.2	51.7	60.0	63.2	214.9	80.1	152.4	64.1	61.0
75	F	F	L	F	Y	Ex	C	C	149.8	34.2	51.7	60.0	63.2	235.7	80.1	150.7	66.2	61.0
Chev. One-Fifty, Two-Ten, Bel Air 6, 8	F	F	L	F	Y	Ex	C	C	115.0	34.4	48.1	58.0	58.9	197.5	73.7	140.7	62.0	58.5
Corvette 2934	F	N	L	RA	N	In	C	C[7]	102.0	24.7	41.4	56.7	56.8	168.0	70.5		52.0	53.6
Oldsmobile 88, Super 88	F	F	L	F	Y	Ex	C	C	122.0	33.3	48.0	59.0	56.0	203.3	78.6	137.7	62.3	58.0
Ninety-Eight	F	F	L	F	Y	Ex	C	C	126.0	33.3	53.0	59.0	56.0	212.3	78.6	137.7	62.3	58.0
Pontiac 860, 870, 56-27	F	F	L	F	Y	Ex	C	C	122.0	35.1	48.5	58.7	59.1	205.6	75.1	143.2	62.5	59.4
Star Chief 56-28	F	F	L	F	Y	Ex	C	C	124.0	35.1	53.5	58.7	59.1	212.6	75.1	143.2	62.5	59.4
STUDEBAKER-PACKARD CORP.																		
Clipper Deluxe 5640, Custom 5660	F	F	L	F	Y	Ex	C	C	122.0	32.3	57.1	59.7	60.0	215.3	78.0	148.0		59.4
Packard 5680, Caribbean 5688	F	F	L	F	Y	Ex	C	C	127.0	32.3	56.4	60.0	60.9	218.6	78.0	148.0		59.4
Studebaker Comdr. 56B, Pres. 56H	F	F	E	Ff	N	Ex	C	C	116.5	36.4	47.9	56.7	55.7	200.8	71.3	135.4	62.0	50.1
Champion 56G	F	F	E	Ff	N	Ex	C	C	116.5	36.4	47.9	56.7	55.7	200.8	71.3	135.4	61.0	50.1
Golden Hawk 56J	F	N	E	Ff	N	Ex	C	C	120.5	34.9	48.6	56.7	55.7	203.9	70.4	151.9	56.1	51.8

ABBREVIATIONS

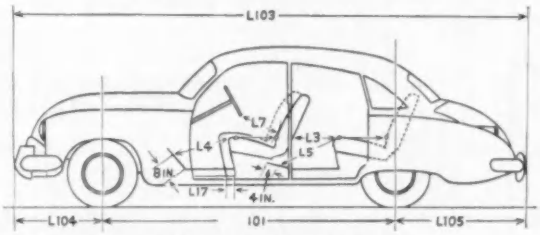
1—63.1 with outside rear tire mount.
2—219.3 with outside rear tire mount.
3—63.9 when 7.60/15 tires are used.
4—58.9 with outside rear tire mount.
5—198.9 with outside rear tire mount.
6—Loaded with top down.
7—One piece flat for convertible.
C—One piece curved.
3C—Three piece curved.
E—Enamel.
Ex—External.
F—Front.
1F—One piece flat.
Ff—Front, full.
In—Internal.
L—Lacquer.
N—No or none.
RA—Reverse alligator.
Rf—Rear, full.
Y—Yes.

For Directory of Car Manufacturers listed above, see page 286

HEIGHT DIMENSIONS



LENGTH DIMENSIONS



1956 PASSENGER CAR BODY DIMENSIONS

All dimensions apply to 5 or 6 passenger, 4-door sedan or equivalent model.

PASSENGER CAR MAKE AND MODEL	HEIGHT DIMENSIONS									WIDTH DIMENSIONS				LENGTH DIMENSIONS				
	Interior					Exterior				Interior				Interior				
	H1	H2	H3	H8	H13	H106	H107	HC	HD	W3	W4	W5	W6	L3	L4	L5	L7	L17
	Front Headroom	Rear Headroom	Front Seat Height to Floor	Rear Seat Height to Floor	Steering Wheel Clearance to Seat Cushion	Angle of Approach—Deg	Angle of Departure—Deg	Ramp Breakover Angle—Deg	Minimum Road Clearance—In	Front Seat Shoulder Room	Rear Seat Shoulder Room	Front Seat Hip Room	Rear Seat Hip Room	Back of Front Seat to Rear Seat Back	Leg Room—Front	Leg Room—Rear	Steering Wheel Clearance	Adjustment of Front Seat
AMERICAN MOTORS CORP.																		
Hudson Wasp 3564O	37.5	36.0	12.5	13.8	6.4	25.0	14.5	13.0	6.3 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Hornet 35660	37.5	36.0	12.3	13.8	6.4	25.5	15.5[1]	13.5	6.8 M[2]	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Hornet 35680	37.5	36.0	12.3	13.8	6.4	25.5	15.5[1]	13.5	6.9 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Metropolitan 561	35.8	N	10.0	N	6.8				6.4 RA	45.3	N	49.8	N	N	43.3	N		4.0
562	35.5	N	10.0	N	6.8				6.4 RA	45.3	N	49.8	N	N	43.3	N		4.0
Nash Statesman 5640	37.5	36.0	12.3	13.8	6.4	25.0	14.5	13.0	6.3 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Ambassador 5660	37.5	36.0	12.3	13.8	6.4	25.5	15.5[1]	13.5	6.8 M[2]	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Ambassador 5680	37.5	36.0	12.3	13.8	6.4	25.5	15.5[1]	13.5	6.9 M	61.5	61.3	65.0	64.5	31.8	42.5	40.1	14.3	5.0
Rambler 5610	36.0	35.0	11.5	14.5	6.0	20.0	13.5[3]	19.0	6.3 FCM	57.7	57.6	59.8	60.1	30.8	43.0	42.0	11.6	5.5
CHRYSLER CORP.																		
Chrysler Windsor C-71	35.1	34.5	13.3	13.7	5.3	17.0	12.0	12.0	6.2 FSM	58.4	58.4	63.3	64.0	32.5	45.7	44.7	15.8	5.0
New Yorker C-72	35.1	34.5	13.3	13.7	5.3	17.5	12.0	12.0	6.5 FSM	58.4	58.4	63.3	64.0	32.5	45.7	44.7	15.8	5.0
300-B C-72-300	34.6	34.0	13.3	13.7	5.3				5.8 FSM	58.5	56.5	63.0	55.0	29.2	45.7	41.6	15.8	5.0
De Soto Firedome S-23	35.1	34.5	13.3	13.7	5.3	19.0	11.0	12.0	6.3 FSM	58.4	58.4	63.3	64.0	32.5	45.7	44.7	15.8	5.0
Fireflite S-24	35.1	34.5	13.3	13.7	5.3	19.0	11.0	12.0	6.2 FSM	58.4	58.4	63.3	64.0	32.5	45.7	44.7	15.8	5.0
Dodge Coronet D-62-1	35.5	34.9	13.4	12.8	5.4	17.0	11.0	11.0	5.0 OP	58.0	57.8	62.5	62.8	31.2	44.5	45.0	14.8	5.0
Coronet D-63-1, Royal D-63-2	35.5	34.9	13.4	12.8	5.4	18.0	12.0	12.0	5.5 OP	58.0	57.8	62.5	62.8	31.2	44.5	45.0	14.8	5.0
Custom Royal D-63-3	35.5	34.9	13.4	12.8	5.4	18.0	12.0	12.0	5.7 OP	58.0	57.8	62.5	62.8	31.2	44.5	45.0	14.8	5.0
Imperial Crown Imperial C-70	37.0	36.3	12.0	13.0	7.0	18.0	11.5	11.0	6.7 FSM	58.3	56.5	63.5	54.5	29.3	42.5	52.5	13.5	3.5
Imperial C-73	35.1	35.0	13.3	12.7	5.3	17.0	12.0	11.0	6.2 FSM	58.3	58.3	62.5	62.0	34.3	45.7	45.7	15.8	5.0
Plymouth Plaza, Savoy, Belvedere P-28	36.1	35.4	12.4	11.9	6.5	18.5	12.0	12.0	5.4 OP	57.0	56.5	62.5	51.5	30.2	44.0	43.6	15.0	5.0
Plaza, Savoy, Belvedere P-29	36.1	35.4	12.4	11.9	6.5	18.5	12.0	12.0	5.6 OP	57.0	56.5	62.5	51.5	30.2	44.0	43.6	15.0	5.0
Fury P-29-3	35.4	34.5	12.4	13.1	6.5	18.0	11.5	11.5	5.1 OP	58.0	57.8	62.5	62.0	27.1	44.0	41.5	15.0	5.0
FORD MOTOR CO.																		
Continental 60-A	35.1	34.6	12.8	13.3	5.5	19.0	11.5	10.8	5.9 FC	55.8	53.4	59.6	56.6	28.6	42.5	39.1	15.0	4.3
Ford Mainline, Customline, Fairlane 6, 8	34.9	33.9	12.6	13.1	5.4	23.2	12.0	13.8	6.5 RSA	57.0	56.8	60.5	60.3	29.5	44.3	41.9	15.0	4.9
Thunderbird 40-A	33.6	N	7.1	N	5.7[4]	23.3	11.8	11.0	5.9	53.3	N	58.8	N	N	45.1	N	14.6[4]	4.0
Thunderbird 40-B	33.1	N	7.1	N	5.7[4]	23.3	11.8	11.0	5.9	53.3	N	58.8	N	N	45.1	N	14.6[4]	4.0
Lincoln Premiere 73-A, Capri 73-B	35.4	34.1	12.1	12.2	5.0	20.2	11.2	11.7	6.8 FSM	59.4	58.4	61.7	63.8	32.3	44.8	42.5	14.7	5.0
Mercury Custom 8	35.2	33.9	12.0	13.1	5.5	22.2	12.0	13.3	6.6 FSM	57.0	56.8	60.6	60.3	31.6	43.8	42.8	13.9	4.9
Monterey 8	35.2	33.9	12.0	13.1	5.5	22.2	11.8	13.3	6.6 FSM	57.0	56.8	60.6	60.3	31.6	43.8	42.8	13.9	4.9
Montclair 8	33.8	32.5	11.5	13.1	5.5	22.2	11.8	13.3	6.6 FSM	57.4	57.5	60.6	60.5	29.2	43.7	40.6	13.7	4.9
GENERAL MOTORS CORP.																		
Buick Special 40	35.6	34.0	12.6	11.5	5.1	22.5	12.6	12.9	6.3 F[5]	58.2	56.7	62.5	62.4	31.6	42.9	40.9	14.1	4.4
Super 50	36.6	35.2	13.4	12.6	5.1	23.0	11.5	12.9	6.6 F	58.9	58.9	64.9	65.7	35.0	43.1	45.8	13.5	4.0
Century 60	35.3	34.4	12.6	12.0	5.1	23.2	13.0	13.4	6.6 F	57.8	56.7	62.5	62.6	31.6	42.8	40.6	14.1	4.4
Roadmaster 70	37.4	35.7	13.2	13.2	5.2	23.6	13.8	13.3	6.8 F	58.9	58.9	64.9	65.7	36.6	43.2	46.3	13.5	4.0
Cadillac 60	35.8	35.1	13.8	12.8	5.4	26.0	15.3	15.8	6.1 FFK	59.5	59.4	64.3	65.2	35.7	43.3	46.3	14.1	4.0
62	35.8	35.1	13.8	12.8	5.4	26.0	17.7	16.4	6.1 FFK	59.5	59.4	64.3	65.2	35.7	43.3	46.3	14.1	4.0
75	36.5	35.1	13.8	12.8	5.6	29.5	19.1	16.3	6.7 ER	59.5	58.4	64.4	59.1	53.5	43.4		14.3	4.0
Chevrolet One-Fifty, Two-Ten, Bel Air 6, 8	35.6	35.6	12.5	13.0	4.7	24.5	15.4	13.9[6]	6.5 UEP	56.8	56.4	62.0	63.0	30.2	43.7	42.6	13.7	4.4
Corvette 2934	36.6	N	8.9	N	4.1	28.2	18.8	14.9	5.8		N		N	N	41.0	N		4.4
Oldsmobile 88	35.5	34.6	13.4	12.3	4.8	21.6	14.6	12.7	6.3 FSM	58.2	56.1	62.4	62.4	31.3	44.4	42.5	14.1	5.0
Super 88	35.5	33.8	13.1	12.7	4.8	21.6	14.6	12.7	6.3 FSM	58.2	56.1	62.4	62.4	31.2	43.1	42.6	14.1	5.0
Ninety-Eight	35.5	33.8	13.1	13.0	4.8	21.6	13.2	12.3	6.2 FSM	58.2	56.1	62.4	62.1	31.2	43.1	42.8	14.1	5.0
Pontiac 860, 870, 56-27	36.0	35.9	13.7	12.2	5.1	24.5	15.2	12.7	6.7 FSM	56.7	56.4	61.9	63.1	31.8	43.4	42.0	14.1	4.4
Star Chief 56-28	36.0	35.9	13.7	12.2	5.1	24.5	13.6	12.5	6.7 FSM	56.7	56.4	61.9	63.1	31.8	43.4	42.0	14.1	4.4
STUDEBAKER-PACKARD CORP.																		
Clipper Deluxe 5640, Custom 5660	36.2	34.5	13.8	13.4	5.1	22.1	11.1	5.4		57.0	55.5	62.8	62.0	31.4	43.3	43.8	14.3	5.0
Packard 5680	36.2	34.9	13.0	13.8	5.5	22.7	12.7	5.8		57.0	55.5	62.8	62.0	37.1	43.0	48.8	14.8	5.0
Caribbean 5688	35.7	35.0	13.6	12.9	5.1	22.7	12.7	5.8		57.0	48.5	62.8	49.5	32.1	43.0	43.8	14.8	5.0
Studebaker Commander 56-B	36.5	35.5	13.5	12.0	5.4	20.0	17.5	14.5	7.3 ERS	55.5	54.5		59.0	27.8	42.5	39.0	15.5	5.5
Champion 56-G	36.5	35.5	13.5	12.0	5.4	18.5	18.0	14.5	6.5 ERS	55.5	54.5	59.5	59.0	27.8	42.5	39.0	15.5	5.5
President 56-H	36.5	35.5	13.5	12.0	5.4	20.0	17.5	14.5	7.3 ERS	55.5	54.5	59.5	59.0	27.8	42.5	39.0	15.5	5.5
Golden Hawk 56-J	35.6	34.0	10.8	12.0	4.3	20.0	19.0	14.5	6.2 BFP	55.0	53.0	59.5	58.0	28.6	43.8	36.0	13.8	5.5

ABBREVIATIONS

1—12.5 with outside rear tire mount.
2—6.9 when equipped with 7.60/15 tires.
3—12.0 with outside rear tire mount.
4—With wheel in neutral position.
5—6.6 when equipped with 7.60/15 tires.
6—Loaded.
BFP—Body front pillar crossmember.
ER—Exhaust resonator.
ERS—Engine rear support crossmember.
F—Frame.
FC—Frame center member.
FCM—Front cross member.
FFK—Front of frame kick up.
FSM—Frame side member.
M—Muffler.
N—No or none.
OP—Oil pan.
RA—Rear axle.
RSA—Rear shock absorber.
UEP—Under exhaust pipe.

For Directory of Car Manufacturers listed above, see page 286

GENERAL ENGINE DATA, PISTONS

PASSENGER CAR MAKE AND MODEL	ENGINE: Type	Valve Arrangement	Number of Cylinders, Bore and Stroke	Piston Displ.—Cu. In.	Compression Ratio (to—1): Standard	Compression Ratio (to—1): Optional	Cyl. Head Material	Mounting Points: Front	Mounting Points: Rear	Taxable HP	Adv. Max. BHP at Engine RPM	Max. Torque (lb. ft. at RPM)	Recommended Idle Speed—RPM	Shipping Weight 5 & 6 Pass.-4 Dr. Sed.	Weight per Cu. In.†	Weight per Hp.†	HP per Cu. In.	PISTONS: Material	Description and Finish	Weight—Oz. (Piston Only)	Clearance: Top Land	Clearance: Top of Skirt	Clearance: Bottom of Skirt	Ring Groove Depth: No. 1 Ring	Ring Groove Depth: No. 2 Ring	Ring Groove Depth: No. 3 Ring	Ring Groove Depth: No. 4 Ring
AMERICAN MOTORS CORP.																											
Hudson Wasp 3564O	IL	L	6 3 x4½	202.0	7.50	8.00	CI	2	2	21.60	120-4000[1]	158-1400[2]	550[3]	3235	18.49	31.13	.594	AA	Vr,Cg	10.13	.0260	.0020	.0015	.1740	.1740	.1560	.156
Hornet 3566O	IL	L	6 3⅛ x4½	308.0	7.50	N	Al	2	2	34.88	165-3800[5]	264-1800[6]	555	3505	13.00	24.27	.536	AA	Vr,Cg	18.56	.0285	.0025	.0015	.2090	.2090	.2090	.209
Hornet 3568O	V	IH	8 4x3⅛	352.0	9.55	N	CI	2	2	51.20	220-4600	320-2350	450	3804	12.23	19.56	.625	AA	Au,Fh,Cg,Se,Tp	24.76	.0235	.0013	.0008	.2130	.2130	.2130	N
Metropolitan 561, 562	IL	IH	4 2⅝ x3½	90.9	7.20	.....	CI	.....	.....	13.22	52-4500	77-2500	.....	1825	25.58	44.71	.572	AA	Alu,Sp,Cg	.....	.....	.....	.....	.....	.....	.....	.....
Nash Statesman 5640	IL	IH	6 3⅛ x4⅛	195.6	7.47	N	CI	2	2	23.44	130-4500	175-1800	550[7]	3174	16.78	28.26	.665	AA	So,Tp,Cg	13.14	.0185	.0009	.0009	.1690	.1690	.1730	.173
Ambassador 5660	IL	IH	6 3⅛ x4⅛	252.6	7.60	N	CI	2	2	29.40	135-3700[8]	220-1600[9]	550[7]	3520	15.91	29.78	.534	AA	So,Tp	19.57	.0225	.0018	.0021	.1868	.1868	.1823	.182
Ambassador 5680	V	IH	8 4x3⅛	352.0	9.55	N	CI	2	2	51.20	220-4800	320-2350	450	3890	11.90	19.05	.625	AA	Au,Fh,Cg,Se,Tp	24.76	.0235	.0013	.0008	.2130	.2130	.2130	N
Rambler 5610	IL	IH	6 3⅛ x4⅛	195.6	7.47	N	CI	2	2	23.44	120-4200	170-1600	550[7]	2968	17.22	28.07	.613	AA	So,Co,Tp	13.14	.0185	.0009	.0009	.1690	.1690	.1730	.173
CHRYSLER CORP.																											
Chrysler Windsor C-71	V	IH	8 3⅛ x3⅝	331.0	8.50	N	CI	2	1	46.50	225-4400[10]	310-2400[11]	475	3900	13.29	19.56	.680	AA	Sb,Hs,Cg,Tp	21.00	.0300	.0010	.....	.2200	.2200	.2100	N
New Yorker C-72	V	IH	8 3⅛ x3⅝	354.0	9.00	N	CI	2	1	49.70	280-4600	380-2800	475	4110	13.02	16.46	.791	AA	Ss,Set,Cg,Tp	22.80	.0300	.....	.0010	.2200	.2200	.2100	N
300-B, C-72-300	V	IH	8 3⅛ x3⅝	354.0	9.00	N	CI	2	1	49.70	340-5200	385-3400	650	4145	13.12	13.66	.960	AA	Se,Set,Cg,Tp	22.80	.0300	.....	.0010	.2200	.2200	.2100	N
De Soto Firedome S-23	V	IH	8 3⅛ x3⅛	330.0	8.50	N	CI	2	1	44.30	230-4400	305-2800	475	3855	13.20	18.93	.697	AA	Sb,Hs,Cg,Tp	19.90	.0320	.0010	.....	.2100	.2100	.2100	N
Firefite S-24	V	IH	8 3⅛ x3⅛	330.0	8.50	N	CI	2	1	44.30	255-4400	350-3200	475	4005	13.65	17.67	.773	AA	Sb,Hs,Cg,Tp	19.90	.0320	.0010	.....	.2100	.2100	.2100	N
Dodge Coronet D-62-1	IL	L	6 3⅛ x4⅛	230.0	7.60	N	CI	1	2	25.40	131-3800	203-2000	475	3295	16.50	28.97	.570	AA	Us,Cg,Tp	15.80	.0300	.....	.0007	.1700	.1700	.1700	.170
Coronet D-63-1	V	IH	8 3⅛ x3⅛	270.0	8.00	N	CI	2	1	42.20	189-4400	266-2400	475	3435	14.57	20.82	.700	AA	Sb,Hs,Cg,Tp	16.20	.0300	.0010	.....	.1900	.1900	.1900	N
Royal D-63-2	V	IH	8 3⅛ x3⅛	315.0	8.00	N	CI	2	1	42.20	218-4400	309-2000	475	3475	12.62	18.23	.692	AA	Sb,Hs,Cg,Tp	17.20	.0310	.0010	.....	.2000	.2000	.2000	N
Custom Royal D-63-3	V	IH	8 3⅛ x3⅛	315.0	8.00	N	CI	2	1	42.20	230-4400	316-2400	475	3520	12.76	17.48	.730	AA	Sb,Hs,Cg,Tp	17.20	.0310	.0010	.....	.2000	.2000	.2000	N
Imperial Crown Imp. C-70, Imp. C-73	V	IH	8 3⅛ x3⅝	354.0	9.00	N	CI	2	1	49.70	280-4600	380-2800	475	4565	14.31	18.09	.791	AA	Sst,Se,Cg,Tp	22.80	.0300	.....	.0010	.2200	.2200	.2100	N
Plymouth Plaza, Savoy, Belvedere P-28	IL	L	6 3⅛ x4⅛	230.0	7.60	N	CI	1	2	25.40	125-3600	200-1600	475	3145	15.85	29.16	.543	AA	Us,Cg,Tp	15.80	.0300	.....	.0007	.1700	.1700	.1700	.170
Plaza, Savoy, P-29-1, P-29-2	V	IH	8 3⅛ x3⅛	270.0	8.00	N	CI	2	1	42.20	180-4400	260-2400	475	3275	13.98	20.97	.667	AA	Sb,Hs,Cg,Tp	16.20	.0300	.0010	.....	.1900	.1900	.1900	N
Plaza, Savoy, Belvedere P-29	V	IH	8 3⅛ x3⅛	277.0	8.00	N	CI	2	1	45.00	187-4400	265-2400	475	3275	13.63	20.19	.675	AA	Sb,Hs,Cg,Tp	19.20	.0320	.0010	.....	.2100	.2100	.2100	N
Fury P-29-3	V	IH	8 3⅛ x3⅛	303.0	9.25	N	CI	2	1	46.50	240-4800	310-2800	475	3650	13.71	17.60	.793	AA	Sb,Hs,Cg,Tp	20.30	.0300	.0010	.....	.2000	.2000	.1900	N
FORD MOTOR CO.																											
Continental 60-A	V	IH	8 4x3⅜	368.0	9.00	N	CI	2	1	51.20	.....	.....	490	4825	14.47	.....	.....	AA	Au,Se,Tp	23.42	.0282	.0012	.0010	.2121	.2121	.2053	N
Ford, Mainline, Customline, Fairlane 6	IL	IH	6 3⅝ x3⅛	223.0	8.00	N	CI	2	1	31.54	137-4200	202-2200	490	3127	16.26	26.47	.614	AA	Au,So,Cg,Fh,Tp	19.30	.0237	.0017	.0009	.1933	.1933	.1769	N
Mainline, Customline 8	V	IH	8 3⅝ x3⅛	272.0	8.00	8.40[12]	CI	2	1	42.05	173-4400[13]	260-2400[15]	490	3238	13.74	21.61	.636	AA	Au,So,Cg,Fh,Tp	18.70	.0237	.0017	.0009	.1933	.1933	.1769	N
Fairlane 8	V	IH	8 3⅝ x3⅛	292.0	8.00	8.40[12]	CI	2	1	45.00	200-4600[14]	285-2600[16]	490	3290	12.98	18.95	.685	AA	Au,So,Cg,Fh,Tp	18.70	.0257	.0017	.0009	.1933	.1933	.1769	N
*Thunderbird 40-A, 40-B	V	IH	8 3⅝ x3⅛	292.0	8.40	N	CI	1	1	45.00	202-4600	289-2600	490	3038	10.84	15.10	.692	AA	Au,Fh,So,Cg,Tp	.....	.0257	.0017	.0009	.1933	.1933	.1769	N
†Thunderbird 40-A, 40-B	V	IH	8 3⅛ x3⅛	312.0	8.40	9.00[12]	CI	1	1	46.21	215-4600[17]	317-2600[18]	490	3038	9.75	14.13	.689	AA	Au,Fh,So,Cg,Tp	.....	.0257	.0017	.0009	.2076	.2076	.1886	N
Lincoln Premiere 73-A, Capri 73-B	V	IH	8 4x3⅛	368.0	9.00	N	CI	2	1	51.20	285-4600	402-3000	490	4289	13.01	16.80	.774	AA	Au,Ss,Fh,Tp	23.42	.0282	.0012	.0010	.2121	.2121	.2053	N
Mercury Cust., Monterey, Montclair 8	V	IH	8 3⅛ x3⅞	312.0	8.00	8.40[19]	CI	2	1	46.21	210-4600[20]	312-2600[21]	490	3520	12.88	19.14	.673	AA	Au,So,Cg,Fh,Tp	20.46	.0257	.0017	.0009	.2026	.2026	.1936	N
GENERAL MOTORS CORP.																											
Buick Special 40	V	IH	8 4x3⅛	322.0	7.60	8.90[12]	CI	2	1	51.20	220-4400[12]	319-2400[12]	450	3790	13.32	19.50	.683	AA	Cg,Ts,Ds,An	19.95	.0300	.0017	.0017	.2120	.2150	.2170	N
Super 50, Century 60, Roadmaster 70	V	IH	8 4x3⅛	322.0	9.50	N	CI	2	1	51.20	255-4400	341-3200	450	4000	13.98	17.65	.792	AA	Cg,Ts,Ds,An	19.95	.0300	.0017	.0017	.2120	.2150	.2170	N
Cadillac 60, 62, 75	V	IH	8 4x3⅜	365.0	9.75	N	CI	2	1	51.20	285-4600[22]	400-2800[23]	400[24]	4370	13.34	17.07	.781	AA	Ts,Cg,St	22.72	.0315	.0015	N	.2080	.2080	.2080	N
Chevrolet One-Fifty, Two-Ten, Bel Air 6	IL	IH	6 3⅞ x3½	235.5	8.00	N	CI	2	2	30.40	140-4200	210-2400	475[27]	3195	15.69	26.39	.594	AA	Cg,Tp,Ce,Fh	18.88	.0370	.0008	.....	.2015	.2015	.2015	N
One-Fifty, Two-Ten, Bel Air 8	V	IH	8 3⅛ x3	265.0	8.00	9.25[4]	CI	2	2	45.00	162-4400[25]	257-2200[26]	475[27]	3170	13.85	22.65	.611	AA	Cg,Tp,Ce,Fh,Se	18.77	.0385	.0008	.....	.2148	.2148	.2073	N
Corvette 2934	V	IH	8 3⅛ x3	265.0	9.25	N	CI	2	2	45.00	225-5200	270-3600	425[24]	2870	10.82	12.75	.849	AA	.....	18.77	.0385	.0008	.....	.2148	.2148	.2073	N
Oldsmobile 88	V	IH	8 3⅞ x3⅛	324.3	9.25	N	CI	1	2	48.00	230-4400[28]	340-2400[29]	425[30]	3748	13.10	18.90	.709	AA	Au,Cg,Tp,Sst	22.07	.0290	.0013	.0008	.2040	.2040	.1975	N
Super 88	V	IH	8 3⅞ x3⅛	324.3	9.25	N	CI	1	2	48.00	240-4400	350-2800	425[30]	3768	13.16	18.20	.740	AA	Au,Cg,Tp,Sst	22.07	.0290	.0013	.0008	.2040	.2040	.1975	N
Ninety-Eight	V	IH	8 3⅞ x3⅛	324.3	9.25	N	CI	1	2	48.00	240-4400	350-2800	400	4028	13.96	18.87	.740	AA	Au,Cg,Tp,Sst	22.07	.0290	.0013	.0008	.2040	.2040	.1975	N
Pontiac 860, 870, 56-27	V	IH	8 3⅜ x3⅛	316.6	7.90	8.90[12]	CI	1	2	49.60	205-4600[31]	294-2600[32]	460	3496	12.62	19.49	.648	AA	Cg,Ss,Sst,Tp	23.15	.0295	.0021	.0012	.2110	.2010	.1840	N
Star Chief 56-28	V	IH	8 3⅜ x3⅛	316.6	7.90	8.90[12]	CI	1	2	49.60	227-4800[12]	312-3000[12]	460	3561	12.83	17.89	.717	AA	Cg,Ss,Sst,Tp	23.15	.0295	.0021	.0012	.2110	.2010	.1840	N
STUDEBAKER-PACKARD CORP.																											
Clipper Deluxe 5640	V	IH	8 4x3⅛	352.0	9.50	N	CI	2	1	51.20	240-4600	350-2800	450	3955	12.66	18.56	.682	AA	Cg,Au,Fh,Ss,Tp	24.76	.0235	.0013	.0008	.2130	.2130	.2130	N
Custom 5660	V	IH	8 4x3⅛	352.0	9.50	N	CI	2	1	51.20	275-4600	380-2800	450	4070	12.98	16.62	.781	AA	Cg,Au,Fh,Ss,Tp	24.76	.0235	.0013	.0008	.2130	.2130	.2130	N
Packard 5680	V	IH	8 4⅛ x3⅛	374.0	10.00	N	CI	2	1	54.45	290-4600	405-2800	450	4255	12.71	16.40	.775	AA	Cg,Au,Fh,Ss,Tp	26.07	.0305	.0013	.0008	.2160	.2160	.2160	N
Caribbean 5688	V	IH	8 4⅛ x3⅛	374.0	10.00	N	CI	2	1	54.45	310-4600	405-2800	450	4580	13.61	16.42	.829	AA	Cg,Au,Fh,Ss,Tp	26.07	.0305	.0013	.0008	.2160	.2160	.2160	N
Studebaker Comm., Power Hawk, Parkview 56B	V	IH	8 3⅞ x3¼	259.2	7.80	8.30	CI	2	133	40.80	170-4500[34]	260-2800[35]	550	3140	14.04	21.41	.656	Lyn	Cg,Tp	16.21	.0195	SFF	.....	.1938	.1938	.1938	N
Champion, Flight Hawk, Pelham 56G	IL	L	6 3x4⅝	185.6	7.50	7.80	CI	2	133	21.60	101-4000	152-1800	550	2835	17.97	33.02	.544	Lyn	Cg,Tp,T	9.35	.0173	SFF	.....	.1635	.1485	.1685	N
Pres., Classic, Sky Hk., Pinehst. 56H	V	IH	8 3⅞ x3⅝	289.0	7.80	8.30	CI	2	133	40.60	195-4500[36]	286-2800[37]	550	3210	12.84	19.03	.675	Lyn	Cg,Tp,Ch	16.22	.0195	SFF	.....	.1938	.1938	.1938	N
Golden Hawk 56J	V	IH	8 4x3⅛	352.0	9.50	N	CI	2	1	51.20	275-4600	380-2800	450	3360	10.97	14.04	.781	AA	Cg,Au,Fh,Ss,Tp	24.76	.0235	.0013	.0008	.2130	.2130	.2130	N

ABBREVIATIONS

*—Shipping weight plus 500 lb. for passengers, oil, water and gasoline.
*—Used with std. trans. only.
†—With overdrive or auto. trans. only.
1—130-4000 with twin carburetors and aluminum head.
2—168-2400 with twin carburetors and aluminum head.
3—575 with overdrive and 500 with auto. trans.
4—When equipped with power package.
5—175-4000 with twin carburetors.
6—278-2300 with twin carburetors.
7—450 with auto. trans.
8—145-4000 with twin carburetors.
9—230-2000 with twin carburetors.
10—250-4400 with power package.
11—340-2800 with power package.
12—When equipped with auto. trans.
13—176-4400 with auto. trans.
14—202-4600 with auto. trans.
15—264-2400 with auto. trans.
16—289-2600 with auto. trans.
17—225-4600 with auto. trans.
18—324-2600 with auto. trans.
19—Also 9.00 when equipped with auto. trans.
20—215 or 225-4600 when equipped with auto. trans.
21—317 or 324-2600 when equipped with auto. trans.
22—Eldorado, 305-4700.
23—Eldorado, 400-3200.
24—In drive range.
25—170-4400 with auto. trans.; 205-4600 with four barrel carburetor and dual exhaust; 225-5200 with two four-barrel carburetors and dual exhaust.
26—257-2400 with auto. trans.; 268-3000 with four barrel carburetor and dual exhaust; 270-3600 with two four-barrel carburetors and dual exhaust.
27—425 with auto. trans. in drive range.
28—240-4400 with four barrel carburetor.
29—350-2800 with four barrel carburetor.
30—400 with auto. trans.
31—227-4800 with four barrel carburetor.
32—312-3000 with four barrel carburetor.
33—Two with auto. trans.
34—185-4500 with four barrel carburetor.
35—265-2800 with four barrel carburetor.
36—210-4500 with four barrel carburetor.
37—292-2800 with four barrel carburetor.
AA—Aluminum alloy. Al—Aluminum.
Alu—Alumilite finish. An—Anodized.
Au—Auto thermic. Ce—Controlled expan.
Cg—Cam ground. Ch—Concave head.
Cl—Cast iron. Co—Conformatic.
Ds—Divorced skirt. Fh—Flat head.
Hs—Horizontal slot. IH—In head.
IL—In line. L—"L" head, valves at side.
Lyn—Lynite. N—No or none.
Sb—Steel band. SFF—Selective feeler fit.
So—Solid skirt. Ss—Slipper type skirt.
Sp—Split skirt. Sst—Steel strut.
St—Stannate coated. T—"T" slot.
Tp—Tin plated. Ts—Transverse slot.
Us—"U" slot.
V—"V" type engine. Vr—"V" rib type.

PISTON RINGS, PISTON PINS, AND CONNECTING RODS

PASSENGER CAR MAKE AND MODEL	Bore	PISTON RINGS															PISTON PIN								CONNECTING RODS						
		Type—Oil or Compression				No. Rings Above Piston Pin	Compression					Oil					Location of Expanders	Material	Length	Diameter	Type			Clearance		Direction Offset in Piston	Material	Weight (oz.)	Length (center to center)	Bearing				
		No. 1	No. 2	No. 3	No. 4		Material	Coating	Width	Gap	Maximum Wall Thickness	Material	Coating	Width	Gap	Maximum Wall Thickness					Locked in—	Location	Bushing Material	In Piston	In Rod					Material	Type (cast or removable)	Effective Length	Clearance	End Play
AMERICAN MOTORS CORP.																																	
Hudson 6-35640	3	C	C	O	O	3	Cl	Ch[1]	.0778[2]	.007	.145	Cl	Gr	.1863[3]	.007	.1344	N	8620	2.4375	.7500	F	R	792	.0002	HPF	N	1041	24.00	8 1/4	15	Re	.9620	.0020	.010
6-35660	3 1/16	C	C	O	O	3	Ir	Ch[5]	.0780	.010	.178	Ir	T	.1860[7]	.010	.1658	N	8620	2.9370	.9680	F	R	792	.0002	HPF	N	1041	33.00	8 1/4	Bsb	Re	1.3780	.0010	.010
8-35680	4	C	C	O	N	3	Ir	Ch[6]	.0780	.019	.200	Ss	Ch	.0245	.015	.0186	OR	1117	3.2500	.9803	F	R	Br	.0001	.0002	MT	SF	26.69	6 11/16	Bsb	Re	.9390	.0015	.007
Metropolitan 4-561562	2 7/8																													Bsb				
Nash 6-5640	3 1/16	C	C	O	O	4	Ir	Ch[9]	(10)	.015	.151	Ir[11]	FG[12]	.1548[7]	(13)	(14)	N	1016	2.7500	.8597	R	N		.0002	N	Ri	1145	33.00	6 5/16	Bsb	Re	.9595	.0013	.010
6-5660	3 1/2	C	C	O	O	4	Ir	Ch[6]	.0933	(15)	.175	Ir[11]	Fe[12]	.1548[7]	(32)	(33)	N	1016	3.1875	.9308	R	N		.0002	N	Ri	SF	29.00	8 3/4	Bsb	Re	1.2720	.0016	.010
6-5680	4	C	C	O	N	3	Ir	Ch[6]	.0780	.019	.200	Ss	Ch	.0245	.015	.186	OR	1117	3.2500	.9803	F	R	Br	.0001	.0002	MT	SF	26.69	6 11/16	Bsb	Re	.9390	.0015	.007
Rambler 6-5610	3 1/16	C	C	O	O	4	Ir	Ch[9]	(10)	.015	.151	Ir[11]	FG[12]	.1548[7]	(13)	(14)	N	1016	2.7500	.8597	R	N		.0002	N	Ri	1145	23.00	6 5/16	Bsb	Re	.9595	.0013	.010
CHRYSLER CORP.																																	
Chrysler 8-C-71	3 1/16	C	C	O	N	3	Ir	T	.0780	.015	.191	Ir	N	.1860	.015	.150	OR	HMS	3.1450	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	25.20	6 1/16	Bsb	Re	.8800	.0010	.010
8-C-72	3 1/16	C	C	O	N	3	Ir	T	.0780	.015	.197	Ir	N	.1860	.015	.158	OR	HMS	3.1450	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	25.20	6 1/16	Bsb	Re	.8800	.0010	.010
8-C-72-300	3 1/16	C	C	O	N	3	Ir	Ch[5]	.0780	.015	.197	Ir	N	.1860	.015	.158	OR	HMS	3.1450	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	25.20	6 1/16	Bca	Re	.8800	.0010	.010
De Soto 8-S-23, S-24	3 1/16	C	C	O	N	3	Ir	T	.0780	.015	.186	Ir	N	.1860	.015	.145	OR	HMS	3.0700	.9226	F	R	Lbs	.9003	.0003	Ri	HMSF	25.10	6 1/16	Bsb	Re	.8100	.0010	.010
Dodge 6-D-62	3 1/16	C	C	O	O	4	Ir	Ch[5]	.0930	.015	.162	Ir	N	.1550	.015	.145	N	HMS	2.7500	.8590	F	R	BrS	.0003	.0002	N	HMSF	27.90	7 1/16	Bsb	Re	.9300	.0010	.009
8-D-63-1	3 5/16	C	C	O	N	3	Ir	T	.0780	.015	.173	Ir	N	.1860	.015	.1658	OR	HMS	2.8900	.8590	F	R	BrS	.0003	.0003	Ri	HMSF	21.20	5 1/16	Bsb	Re	.8100	.0010	.010
8-D-63-2, D-63-3	3 5/16	C	C	O	N	3	Ir	T	.0780	.015	.181	Ir	N	.1860	.015	.145	OR	HMS	3.0700	.9220	F	R	BrS	.0002	.0003	Ri	HMSF	24.00	6 1/16	Bsb	Re	.7800	.0010	.010
Imperial 8-C-70, C-73	3 1/16	C	C	O	N	3	Ir	T	.0780	.015	.197	Ir	N	.1860	.015	.158	OR	HMS	3.1450	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	25.20	6 1/16	Bsb	Re	.8800	.0010	.010
Plymouth 6-P-28	3 1/16	C	C	O	O	4	Ir	Ch[5]	.0930	.015	.160	Ir	N	.1560	.015	.150	N	HMS	2.7500	.8590	F	R	BrS	.0003	.0003	N	HMSF	27.90	7 1/16	Bsb	Re	.9300	.0010	.009
8-P-29 (270 cu. in.)	3 5/16	C	C	O	N	3	Ir	T	.0780	.015	.170	Ir	N	.1860	.015	.1658	OR	HMS	2.8800	.8590	F	R	BrS	.0003	.0003	Ri	HMSF	21.20	5 1/16	Bsb	Re	.8100	.0010	.010
8-P-29 (277 cu. in.)	3 5/16	C	C	O	N	3	Ir	T	.0780	.015	.180	Ir	N	.1860	.015	.140	OR	HMS	3.0000	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	25.30	6 1/16	Bsb	Re	.8100	.0015	.010
8-P-29-3 Fury	3 1/16	C	C	O	N	3	Ir	T	.0780	.015	.180	Ir	N	.1860	.015	.140	OR	HMS	3.0030	.9840	F	R	BrS	.0003	.0003	Ri	HMSF	24.70	6 1/16	Bsb	Re	.8100	.0015	.010
FORD MOTOR CO.																																	
Continental 8-60-A	4	C	C	O	N	3	Cl	Ch[16]	(30)	.018	.187	Cl	BN	.1863	.018	.172	N	AS	3.1690	.9122	F	R	Br	.0002	.0003	Ri	SF	28.36	7 1/16	Cls	Re	.7890	.0016	.010
Ford 6	3 5/16	C	C	O	N	3	Cl	Ch[16]	.0933	.015	(17)	St	Ch	.1830	.035	.177	OR	AS	3.0230	.9122	F	R	Br	.0002	.0002	Ri	SF	29.63	6 1/16	Bab	Re	1.0340	.0014	.006
*8-272 cu. in.	3 5/16	C	C	O	N	3	Cl	Ch[15]	.0933	.015	.181	St	Ch	.1830	.035	.177	OR	AS	3.0230	.9122	F	R	Br	.0002	.0002	Ri	SF	24.06	6 1/16	Cls	Re	.7110	.0018	.011
†8-292 cu. in.	3 5/16	C	C	O	N	3	Cl	Ch[16]	.0933	.015	.181	St	Ch	.1830	.035	.177	OR	AS	3.0230	.9122	F	R	Br	.0002	.0002	Ri	SF	24.06	6 1/16	Cls	Re	.7110	.0018	.011
*8-40-A, 40-B	3 3/4	C	C	O	N	3	Cl	Ch[16]	.0933	.015	.168	St	Ch	.1830	.035	.158	OR	AS	3.0250	.9122	F	R	Br	.0002	.0002	Ri	SF	23.01	6 1/16	Cls	Re	.7110	.0018	.011
Lincoln 8-73-A, 73-B	4	C	C	O	N	3	Cl	Ch[16]	(30)	.018	.187	Cl	Bl	.1863	.018	.172	N	AS	3.1690	.9122	F	R	Br	.0002	.0003	Ri	SF	28.36	7 1/16	Cls	Re	.7890	.0016	.010
Mercury 8	3 11/16	C	C	O	N	3	Cl	Ch[16]	(18)	(19)	.178	St	Ch	.1830	.035	.153	OR	AS	3.0230	.9122	F	R	Br	.0002	.0002	Ri	SF	22.83	6 1/16	Cls	Re	.7110	.0018	.011
GENERAL MOTORS CORP.																																	
Buick 8-40, 50, 60, 70	4	C	C	O	N	3	Cl	Lub	.0780	.015	.200	St	N	.1860	.025	.135	OR	1118	3.4000	.9400	R	N		.0004	.0011	N	1141	22.16	6	Asb	Re	.8810	.0013	.009
Cadillac 8-60, 62, 75	4	C	C	O	N	3	St[20]	Ch[12]	.0781	.018	(21)	Cl	N	.1875	.018	.150	OR	1045	3.0930	1.0000	R	N		.0001	PF	MT	1041	23.49	6 5/16	Dur	Re	.8175	.0013	.011
Chevrolet 6-1500, 2100, 2400	3 7/8	C	C	O	N	3	CAl	WR	.0933	.012	.178	St	Ch	.1845	.035	.153	OR	CS	3.1830	.8663	R	N		.0002	N	MT	DFS	31.70	6 1/16	Bsb	Re	1.0080	.0013	.008
8-1500, 2100, 2400	3 7/8	C	C	O	N	3	CAl	WR	.0775	.014	.187	St	Ch	.1845	.035	.168	OR	CS	3.1200	.9272	R	N		.0002	N	MT	DFS	19.02	5 1/16	Bsb	Re	.8170	.0013	.011
8-2934	3 7/8	C	C	O	N	3	CAl	Ch[22]	.0775	(23)	(24)	St	Ch	.1845	.035	.168	OR	CS	3.1200	.9272	R	N		.0002	N	MT	DFS	19.02	5 1/16	Bsb	Re	.8170	.0018	.011
Oldsmobile 8-88, 98	3 7/8	C	C	O	N	3	Cl	Ch[25]	.0775	(26)	.194	Cl	N	.1865	(26)	.159	OR	1117	3.1260	.9805	F	R	Br	.0001	.0004	Ri	1335	29.54	6 5/16	Dbs	Re	.8810	.0019	.007
Pontiac 8-56-27, 56-28	3 7/8	C	C	O	N	3	Cl	Ch[12]	.0780	(31)	(27)	Ss	Ch	.1830	.025	.139	OR	1117	3.1260	.9805	F	R	Lb	.0002	.0004	Ri	1335	29.76	6 5/16	Dsb	Re	.8800	.0019	.009
STUDEBAKER-PACKARD CORP.																																	
Clipper 8-5640, 5660	4	C	C	O	N	3	Ir	Ch[6]	.0780	.019	.200	Ss	Ch	.0245	.015	.186	OR	1117	3.2500	.9803	F	R	Br	.0001	.0002	MT	SF	26.69	6 11/16	Bsb	Re	.9390	.0015	.007
Packard 8-5680, 5688	4 1/16	C	C	O	N	3	Ir	Ch[6]	.0780	.018	.206	Ss	Ch	.0245	.015	.186	OR	1117	3.2500	.9803	F	R	Br	.0001	.0002	MT	SF	26.69	6 11/16	Bsb	Re	.9390	.0015	.007
Studebaker 8-56-B	3 7/8	C	C	O	N	3	Cl	Gr	.0781	.012	.178	Cl	Gr	.1875	.012	.141	OR	5120	3.0625	.8750	R	N		.0002	N	N	1141	23.71	6 1/16	Bsb	Re	.8125	.0011	.010
8-56-G	3	C	C	O	N	3	Cl	Fe	(28)	.012	(29)	Cl	BN	.1563	.011	.138	OR	8620	2.6250	.7500	R	N		.0002	N	N	1041	19.04	6 5/16	Bsb	Re	.8750	.0011	.007
8-56-H	3 1/16	C	C	O	N	3	Cl	Gr	.0781	.012	.178	Cl	Gr	.1875	.012	.141	OR	5120	3.0625	.8750	R	N		.0002	N	N	1141	23.71	6 1/16	Tsb	Re	.8125	.0011	.010
8-56-J	4	C	C	O	N	3	Cl	Ch[6]	.0781	.019	.200	Ss	Ch	.0245	.015	.186	OR	1117	3.2500	.9803	F	R	Br	.0001	.0002	MT	SF	26.69	6 11/16	Bsb	Re	.9375	.0015	.007

ABBREVIATIONS

*—Used in Mainline and Customline models only.
†—Used in all Fairlane models and Thunderbird with std. trans. only.
▲—Used with overdrive or auto. trans. only.
1—Upper only; lower, granoseal.
2—Upper only; lower, .0780.
3—Upper only; lower, .1548.
4—Upper only; lower, .130.
5—Upper only; lower, tin.
6—Upper only; lower, ferrox.
7—Upper only; lower, .1545.
8—Upper only; lower, .151.
9—Upper only; lower, lubrite or granoseal.
10—Upper, .0933; lower, .0930.
11—Upper only; lower, steel.
12—Upper only; lower, lubrite.
13—Upper, .015; lower, .007.
14—Upper, .144; lower, .155.
15—Upper, .011; lower, .010.
16—Upper only; lower, phosphate.
17—Upper, .187; lower, .181.
18—Upper, .0778; lower, .0935.
19—Upper, .018; lower, .015.
20—Upper only; lower, cast iron.
21—Upper, .185; lower, .200.
22—Upper only; lower, wear resistant.
23—Upper, .012; lower, .014.
24—Upper, .179; lower, .187.
25—Upper only; lower, Perfect Circle, lubrite, Sealed Power, granoseal.
26—Sealed Power, .012; Perfect Circle, .015.
27—Upper, .182; lower, .197.
28—Upper, .0938; lower, .1250.
29—Upper, .150; lower, .135.
30—Upper, .0778; lower, .0930.
31—Upper, .015; lower, .014.
32—Upper, .012; lower, .007.
33—Upper, .157; lower, .155.
AS—Alloy steel, heat treated.
Asb—Aluminum, steel backed.
Bab—Babbitt.
Bcs—Babbitt on copper lead alloy, steel backed.
Bl—Blued. **BN**—Blued or none.
Br—Bronze. **BrS**—Bronze, steel backed.
Bsb—Babbitt, steel backed.
C—Compression. **CAl**—Cast alloy iron.
Ch—Chromium. **Cl**—Cast iron.
Cls—Copper lead, steel backed.
CS—Chromium steel.
Dbs—Durex with babbitt overlay, steel backed.
DFS—Drop forged steel.
Dsb—Durex, steel backed.
Dur—Durex. **F**—Floating.
Fe—Ferrox. **FG**—Ferrox or granoseal.
Gr—Granoseal.
HMS—High manganese steel.
HMSF—High manganese steel forging.
HPF—Hand push fit. **Ir**—Iron.
Lb—Lead bronze.
Lbs—Lead bronze, steel backed.
Lub—Lubrite.
MT—Toward maximum thrust side.
N—No or none.
O—Oil.
OR—Oil ring. **PF**—Press fit.
R—Connecting rod. **Re**—Removable.
Ri—Right. **SF**—Steel forging.
Ss—Spring steel. **St**—Steel.
T—Tin.
Tsb—Tri-metal, steel backed.
WR—Wear resistant.

For Directory of Car Manufacturers listed above, see page 286

CRANKSHAFTS, CAMSHAFTS

PASSENGER CAR MAKE AND MODEL	CRANKSHAFT																		CAMSHAFT										
						Main Bearing														Bearings		Type of Drive							
									Journal Diameter and Bearing Effective Length																Timing Chain			
	Material	Weight (lb.)	Vibration Dampener Type	End Thrust Taken Up by Bearing	Crankshaft End Play	Material	Type (cast or removable)	Clearance	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	Connecting Rod Journal Crankpin Diameter	Material	Material	Number	Gear or Chain	Crankshaft Gear or Sprocket Material	Camshaft Gear or Sprocket Material	Make	No. of Links	Width	Pitch
AMERICAN MOTORS CORP.																													
Hudson 6-35640	1045	77.13	Rub	3	.0060	15	Re	.0010	2.4995x1.3125	2.4995x1.2500	2.4995x1.4955	2.4995x1.5000	None	None	None	1.9375	CI	15	4	Ch	St	CI	Mor	60	1.0000	.375
6-35660	DFS	87.50	Rub	3	.0060	Bsb	Re	.0010	2.4995x1.4375	2.4995x1.3750	2.4995x1.6250	2.4995x1.7500	None	None	None	2.1250	CAI	Bsb	4	Ch	St	CAI	Mor	60	1.2500	.375
8-35680	CI	86.00	NBR	5	.0060	Bsb	Re	.0013	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x1.7360	None	2.2500	CAI	Bsb	5	Ch	St	CAI	Mor	64	1.0000	.375
Metropolitan 4-561, 562	SF					Bsb						None	None	None	None		SF	Bsb	3	Ch							
Nash 6-3540	DFS	65.50	RF	1	.0050	Bsb	Re	.0012	2.4795x1.1250	2.4795x1.1250	2.4795x1.1250	2.4795x1.5312	None	None	None	2.0952	SCI	Bsb	4	Ch	1117	110	Mor	60	1.0000	.375
6-3660	DFS	70.50	RF	4	.0050	Bsb	Re	.0014	2.4795x1.2500	2.4795x .9375	2.4795x .9375	2.4795x1.7500	2.4795x .9375	2.4795x .9375	2.4795x1.6250	2.0007	CAI	Bsb[1]	4	Ch	St	110	Mor	60	1.0000	.375
8-3680	CS	56.00	NBR	5	.0060	Bsb	Re	.0013	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x1.7360	None	2.2500	CAI	Bsb	5	Ch	St	CAI	Mor	64	1.0000	.375
Rambler 6-3610	DFS	65.50	RF	1	.0050	Bsb	Re	.0012	2.4795x1.1250	2.4795x1.1250	2.3795x1.1250	2.4795x1.5312	None	None	None	2.0952	SCI	Bsb	4	Ch	1117	110	Mor	60	1.0000	.375
CHRYSLER CORP.																													
Chrysler 8-C-71, C-72	DFS	.....	RD	3	.0045	Bsb	Re	.0010	2.5000x .8200	2.5000x .8200	2.5000x .7400	2.5000x .8200	2.5000x1.3900	None	None	2.2500	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
8-C-72-300	DFH	.....	RD	3	.0045	Bcs	Re	.0010[2]	2.5000x .8200	2.5000x .8200	2.5000x .7400	2.5000x .8200	2.5000x1.3900	None	None	2.2500	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
De Soto 8-S-23, S-24	DFS	.....	RD	3	.0045	Bsb	Re	.0010	2.5000x .7500	2.5000x .7500	2.5000x .7200	2.5000x .7500	2.5000x1.3400	None	None	2.5000	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
Dodge 6-D-62	DFS	.....	RD	4	.0045	Bsb	Re	.0010	2.5000x1.2000	2.5000x1.0000	2.5000x1.0000	2.5000x1.5900	None	None	None	2.0600	SC	Bsb[4]	4	Ch	HMS	CI	Mor	48	1.0200	.500
8-D-63-1	DFS	.....	N[3]	3	.0045	Bsb	Re	.0010	2.3800x .8100	2.3800x .8100	2.3800x .8100	2.3800x .8100	2.3800x1.5300	None	None	1.9400	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
8-D-63-2, D-63-3	DFS	.....	N[3]	3	.0045	Bsb	Re	.0010	2.5000x .8100	2.5000x .8100	2.5000x .8100	2.5000x .8100	2.5000x1.5300	None	None	2.2500	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
Imperial 8-C-70, C-73	DFS	.....	RD	3	.0045	Bsb	Re	.0010	2.5000x .8200	2.5000x .8200	2.5000x .8200	2.5000x .8200	2.5000x1.3900	None	None	2.2500	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.375
Plymouth 6-P-28	DFS	.....	RD[5]	4	.0045	Bsb	Re	.0015	2.5000x1.2000	2.5000x1.0000	2.5000x1.0000	2.5000x1.5900	None	None	None	2.0600	SC	Bsb[4]	4	Ch	HMS	CI	Mor	48	1.0200	.500
8-P-29 (270 cu. in.)	DFS	.....	N	3	.0045	Bsb	Re	.0010	2.3800x .8100	2.3800x .8100	2.3800x .8100	2.3800x .8100	2.3800x1.5300	None	None	1.9400	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.380
8-P-29 (277 cu. in.)	DFS	.....	N	3	.0045	Bsb	Re	.0015	2.5000x .8400	2.5000x .8400	2.5000x .9200	2.5000x .8400	2.5000x1.5300	None	None	2.1300	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.0200	.380
8-P-29-3 Fury	DFS	.....	RD	3	.0045	Bsb	Re	.0015	2.5000x .8400	2.5000x .8400	2.5000x .9200	2.5000x .8400	2.5000x1.5300	None	None	2.1300	SC	Bsb	5	Ch	HMS	CI	Mor	68	1.1250	.380
FORD MOTOR CO.																													
Continental 8-60A	AI	57.50	RFI	3	.0060	Cls	Re	.0017	2.6239x .6920	2.6239x .6920	2.6239x .5690	2.6239x .6920	2.6239x1.4170	None	None	2.2486	SAI	Bsb	5	Ch	St	CI	.....	50	1.2500	.500
Ford 6	AI	68.25	RFI	3	.0060	Bsb	Re	.0013	2.4984x .9540	2.4984x .9540	2.4984x .8950	2.4984x1.1790	None	None	None	2.2984	AI	Bsb	4	Ch	St	CI	.....	56	.9375	.375
8	AI	50.43	RFI	3	.0040	Cld	Re	.0017	2.4984x .7280	2.4984x .7280	2.4984x .6620	2.4984x .7280	2.4984x .7280	None	None	2.1884	AI	Bsb	5	Ch	St	CI	.....	56	.9375	.375
*8-40A, 40B	AI	50.43	RFI	3	.0040	Cls	Re	.0017	2.4984x .7280	2.4984x .7280	2.4984x .6620	2.4984x .7280	2.4984x .7280	None	None	2.1884	AI	Bsb	5	Ch	St	CI	.....	56	.9375	.375
†8-40A, 40B	AI	50.43	RFI	3	.0060	Cls	Re	.0017	2.6239x .6880	2.6239x .6880	2.6239x .6620	2.6239x .6880	2.6239x .6880	None	None	2.1884	AI	Bsb	5	Ch	St	CI	.....	56	.9375	.375
Lincoln 8-73A, 73B	AI	57.50	RFI	3	.0060	Cld	Re	.0017	2.6239x .6920	2.6239x .6920	2.6239x .5690	2.6239x .6920	2.6239x1.4170	None	None	2.2486	SAI	Bsb	5	Ch	St	CI	.....	50	1.2500	.500
Mercury 8	AI	50.43	RFI	3	.0040	Cls	Re	.0017	2.6239x .6880	2.6239x .6880	2.6239x .6620	2.6239x .6880	2.6239x .6880	None	None	2.1884	AI	Bsb	5	Ch	St	CI	.....	56	.9375	.375
GENERAL MOTORS CORP.																													
Buick 8-40, 50, 60, 70	1145	56.70	RA	5	.0060	Dsb	Re	.0015	2.4985x1.2500	2.4985x1.2500	2.4985x1.2500	2.4985x1.2500	2.4985x1.7650	None	None	2.2495	CAI	Bsb	5	Ch	1140	CI	LB	52	.6880	.500
Cadillac 8-60, 62, 75	1145	71.00	RA	5	.0030	Dur	Re	.0017	2.6250x .9070	2.6250x .9070	2.6250x .9070	2.6250x .9070	2.6250x1.6220	None	None	2.2500	CI	Bsb	5	Ch	1115[6]	1115	LB	46	.6875	.500
Chevrolet 8-1500, 2100, 2400	DFS	78.50	Osc	3	.0065	Bsb	Re	.0016[7]	2.6840x1.0630	2.7150x .9070	2.7460x .9680	2.7770x1.1890	None	None	None	2.3115	CAI	Bsb	4	G	St	BFC	N	.....	.....	.....
8-1500, 2100, 2400	DFS	47.75	Osc	5	.0040	Bsb	Re	.0021	2.2983x .7020	2.2983x .7020	2.2983x .7020	2.2983x .7020	2.2983x1.1600	None	None	1.9995	CAI	Bsb[8]	5	Ch	St	CAI	LB	46	.8750	.500
8-2934	DFS	47.75	Osc	5	.0040	Bsb	Re	.0021	2.2983x .7020	2.2983x .7020	2.2983x .7020	2.2983x .7020	2.2983x1.1600	None	None	1.9995	CAI	Bsb	5	Ch	St	CAI	LB	46	.8750	.500
Oldsmobile 8-88, 98	1145	59.25	RA	5	.0060	Dbs	Re	.0013[9]	2.5000x .7300	2.5000x .7300	2.5000x .7300	2.5000x .7300	2.6250x1.4200	None	None	2.2500	CAI	Bsb[10]	5	Ch	(11)	CI	L-M	48[12]	(13)	(14)
Pontiac 8-58-27, 58-28	(15)	(16)	HB	4	.0060	Dsb	Re	(17)	2.5000x .9400	2.5000x .9400	2.5000x .9400	2.5000x .9400	2.5000x .9100	2.5000x1.5600	None	2.2500	AIH	Bsb	5	Ch	CHS	AIC	Mor	60	1.0000	.380
STUDEBAKER-PACKARD CORP.																													
Clipper 8-5640, 5660	CS	56.00	NBR	5	.0060	Cls[18]	Re	.0013	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x1.7360	None	None	2.2500	CAI	Bsb	5	Ch	HTS	CAI	Mor	64	1.0000	.375
Packard 8-5680, 5688	CS	56.00	NBR	5	.0060	Cls[18]	Re	.0013	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x1.7360	None	None	2.2500	CAI	Bsb	5	Ch	HTS	CAI	Mor	64	1.0000	.375
Studebaker 6-56B	1046	54.00	RMD	1	.0045	Bsb	Re	.0017	2.5000x1.0000	2.5000x .8750	2.5000x .8750	2.5000x .8750	2.5000x1.5156	None	None	2.0000	CAI	Bsb	5	G	CI	CSH	N	.....	.....	.....
6-56G	1046	67.00	RMD	1	.0045	Bsb	Re	.0014	3.0625x1.0313	3.0625x1.0938	3.0625x1.0938	3.0625x1.5000	None	None	None	1.8125	CAI	Bsb	4	G	CI	CSH	N	.....	.....	.....
6-56H	1046	57.00	RMD	1	.0045	Bsb	Re	.0017	2.5000x1.0000	2.5000x .8750	2.5000x .8750	2.5000x .8750	2.5000x1.5156	None	None	2.0000	CAI	Bsb	5	G	CI	CSH	N	.....	.....	.....
8-56J	CS	56.00	NBR	5	.0060	Bsb	Re	.0013	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x .9500	2.4990x1.7360	None	None	2.2500	CAI	Bsb	5	Ch	HTS	CAI	Mor	64	1.0000	.375

ABBREVIATIONS

*—Used with std. trans. only.
†—Used with overdrive and auto. trans. only.
1—No. 1 bearing is of cast iron.
2—Rear main, .0020.
3—Rubber-dynamic type when equipped with power package.
4—No. 4 bearing is of cast iron.
5—Savoy and Belvedere only; Plaza has none.
6—Or 1118.
7—No. 1 and 2 only; No. 3 and 4, .0018.
8—Aluminum steel backed, with lead and tin overlay when equipped with two four-barrel carburetors.
9—Front only; rear, .0028; all others, .0018.
10—Or copper lead bronze.
11—Link Belt, 1140; Morse, 1117 or 1118.
12—Link Belt only; Morse, 64.
13—Link Belt, .8438; Morse, .8750.
14—Link Belt, .500; Morse, .375.
15—Cast pearlitic malleable iron or 1045 steel.
16—Forged shaft, 59.4C; cast shaft, 53.70.
17—Front, .0015; rear, .0021; all others, .0018.
18—Rear bearing; babbitt, steel backed.
AI—Alloy iron.
AIC—Alloy iron, cyanide hardened.
AIH—Alloy iron, hardened.
Bab—Babbitt.
Bcs—Babbitt on copper lead alloy, steel backed.
BFC—Bakelite and fabric composition with steel hub.
Bsb—Babbitt, steel backed.
CAI—Cast alloy iron.
Ch—Chain.
CHS—Carburized and hardened steel.
CI—Cast iron.
Cld—Copper lead.
Cls—Copper lead, steel backed.
CS—Cast steel.
CSH—Celeron with steel hub.
Dbs—Durex with babbitt overlay, steel backed.
DFH—Drop forged steel, hardened.
DFS—Drop forged steel.
Dsb—Durex, steel backed.
Dur—Durex.
G—Gear.
HB—Harmonic balancer.
HMS—High manganese steel.
HTS—Heat treated steel.
LB—Link Belt.
L-M—Link Belt or Morse.
Mor—Morse.
N—No or none.
NBR—Non-bonded rubber.
Osc—Oscillating (rubber floating).
RA—Rubber absorption.
RD—Rubber-dynamic.
Re—Removable.
RF—Rubber and friction.
RFi—Rubber-floated.
RMD—Rubber mounted disc.
Rub—Rubber.
SAI—Special alloy iron.
SC—Special cast iron.
SCI—Special cast iron alloy.
SF—Steel forging.
St—Steel.

VALVES, INTAKE AND EXHAUST

PASSENGER CAR MAKE AND MODEL	Hydraulic Lifters	Special Provision for Valve Rotation (Intake or Exhaust)	Rocker Ratio—to-1	INTAKE												EXHAUST											
							Seat		Stem			Springs							Seat		Stem			Springs			
												Pressure (lb)		Length (in)									Pressure (lb)		Length (in)	
				Material	Overall Length	Actual Overall Head Diameter	Angle (Deg.)	Insert Material	Diameter (In.)	Guide Clearance	Lift (In.)	Valve Closed	Valve Open	Valve Closed	Valve Open	Material	Overall Length	Actual Overall Head Diameter	Angle (Deg.)	Insert Material	Diameter (In.)	Guide Clearance	Lift (In.)	Valve Closed	Valve Open	Valve Closed	Valve Open
AMERICAN MOTORS CORP.																											
Hudson 6-35640	N	N	N	8645	5.045	1.500	45	N	.3417	.0020	.346	44.0	120.0	1.953	1.607	8645[1]	5.045	1.395	46	N	.3407	.0030	.346	44.0	120.0	1.953	1.607
6-35660	Y	N	N	8645	5.730	1.831	45	N	.3417	.0023	.346	77.0	159.0	2.188	1.842	8645[1]	5.730	1.556	45	N	.3407	.0030	.346	77.0	159.0	2.188	1.842
6-35680	Y	N	1.600	SCS	5.712	2.000	29	N	.3725	.0015	.388	92.0	180.0	1.750	1.375	3140[2]	5.690	1.687	44½	N	.3715	.0025	.378	92.0	180.0	1.750	1.375
Metropolitan 4-561, 562																											
Nash 6-5640	N	N	1.463	SCS	4.759	1.594	45	N	.3415	.0021	.383	67.5	120.0	1.813	1.438	3150[2]	4.759	1.343	45	N	.3410	.0026	.385	67.5	120.0	1.813	1.438
6-5660	N	N	1.475	3140	5.485	1.787	30	N	.3730	.0030	.382	55.5	149.0	1.813	1.438	3140[1]	5.484	1.469	45	N	.3725	.0030	.378	55.5	149.0	1.813	1.438
6-5680	Y	N	1.600	SCS	5.712	2.000	29	N	.3725	.0015	.388	92.0	180.0	1.750	1.375	3140[2]	5.690	1.687	44½	N	.3715	.0025	.378	92.0	180.0	1.750	1.375
Rambler 6-5610	N	N	1.463	SCS	4.759	1.594	45	N	.3415	.0021	.366	67.5	120.0	1.813	1.438	3150[2]	4.759	1.343	45	N	.3410	.0026	.361	67.5	120.0	1.813	1.438
CHRYSLER CORP.																											
Chrysler 8-C-71	Y	Bo	1.500	SCS	4.720	1.810	45	N	.3720	.0020	.381	72.0	166.0	1.690	1.310	NMC	4.620	1.500	45	N	.3720	.0030	.357	72.0	166.0	1.690	1.310
8-C-72	Y	Bo	1.500	SCS	5.030	1.940	45	N	.3720	.0020	.381	72.0	166.0	1.690	1.310	NMC	4.990	1.750	45	N	.3720	.0030	.357	72.0	166.0	1.690	1.310
8-C-72-300	N	Bo	1.500	SCS	5.030	1.940	45	N	.3720	.0020	.444	60.0[3]	158.0[3]	1.660[3]	1.220[3]	NMC	4.990	1.750	45	A	.3720	.0030	.435	60.0[3]	158.0[3]	1.660[3]	1.220[3]
De Soto 8-S-23, S-24	Y	E	1.500	SCS	4.840	1.940	45	N	.3720	.0020	.381	72.0	166.0	1.690	1.310	NMC	4.860	1.750	45	N	.3720	.0030	.357	72.0	166.0	1.690	1.310
Dodge 6-D-62	N	N	N	SCS	4.840	1.530	45	N	.3400	.0020	.379	42.0	115.0	1.750	1.380	CNS	4.780	1.410	45	ACI	.3400	.0040	.365	42.0	115.0	1.750	1.380
8-D-63-1	Y	Bo	1.500	SCS	4.250	1.720	45	N	.3700	.0020	.360	53.0	140.0	1.690	1.310	CNS	4.200	1.470	45	N	.3700	.0030	.360	53.0	140.0	1.690	1.310
8-D-63-2, D-63-3	Y	Bo	1.500	SCS	4.250	1.720	45	N	.3700	.0020	.354	53.0	140.0	1.690	1.310	CNS	4.200	1.470	45	N	.3700	.0030	.336	53.0	140.0	1.690	1.310
Imperial 8-C-70, C-73	Y	Bo	1.500	SCS	5.030	1.940	45	N	.3720	.0020	.381	72.0	166.0	1.690	1.310	NMC	4.990	1.750	45	N	.3720	.0030	.357	72.0	166.0	1.690	1.310
Plymouth 6-P-28	N	N	N	SCS	4.840	1.530	45	N	.3400	.0020	.365	42.0	115.0	1.750	1.380	CNS	4.840	1.410	45	ACI	.3400	.0040	.365	42.0	115.0	1.750	1.380
8-P-29 (270 cu. in.)	Y	Bo	1.500	SCS	4.250	1.720	45	N	.3700	.0020	.360	53.0	140.0	1.690	1.310	CNS	4.200	1.470	45	N	.3700	.0030	.360	53.0	140.0	1.690	1.310
8-P-29 (277 cu. in.)	N	Bo	1.500	SCS	4.540	1.840	45	N	.3700	.0020	.374	72.0	166.0	1.690	1.310	CNS	4.480	1.560	45	N	.3700	.0030	.380	72.0	166.0	1.690	1.310
8-P-29-3 Fury	N	Bo	1.500	SCS	4.540	1.840	45	N	.3700	.0020	.379	72.0	166.0	1.690	1.310	CNS	4.480	1.560	45	N	.3700	.0030	.376	72.0	166.0	1.690	1.310
FORD MOTOR CO.																											
Continental 8-80A	Y	Bo	1.600	CS	5.270	2.005	45½	N	.3420	.0015	.417	70.5	192.5	1.800	1.380	AS	5.250	1.635	45½	N	.3410	.0025	.417	70.5	192.5	1.800	1.380
Ford 6	N	Bo	1.420	CS	5.110	1.780	45½	N	.3420	.0015	.370	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3410	.0025	.370	75.0	166.0	1.780	1.390
All 8	N	Bo	1.540	CS	5.110	1.780	45½	N	.3420	.0015	.386	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3410	.0025	.384	75.0	166.0	1.780	1.390
Lincoln 8-73A, 73B	Y	Bo	1.600	CS	5.270	2.005	45½	N	.3420	.0015	.417	70.5	192.5	1.800	1.380	AS	5.250	1.635	45½	N	.3410	.0025	.417	70.5	192.5	1.800	1.380
Mercury 8	N	Bo	1.540	CS	5.110	1.780	45½	N	.3420	.0015	.386	75.0	169.0	1.780	1.390	AS	5.090	1.510	45½	N	.3410	.0025	.384	75.0	169.0	1.780	1.390
GENERAL MOTORS CORP.																											
Buick 8-40, 50, 60, 70	Y	N	1.500	NCA	4.704	1.750	45	N	.3720	.0025	.378	45.5[4]	94.0[4]	1.500[4]	1.120[4]	2155	4.704	1.375	45	N	.3704	.0040	.378	45.5[4]	94.0[4]	1.500[4]	1.120[4]
Cadillac 8-60, 62, 75	Y	N	1.650	3140[5]	4.638[6]	1.750	44	N	.3420	.0015	.451	62.5	177.5	1.894	1.444	8729[7]	4.656	1.562	44	N	.3418	.0018	.451	62.5	177.5	1.894	1.444
Chevrolet 6-1500, 2100, 2400	Y	N	1.477	SCN	6.386	1.875	31	N	.3414	.0019	.400	78.0	202.0	1.858	1.462	CNM	4.923	1.500	46	N	.3414	.0019	.400	78.0	202.0	1.858	1.462
8-1500, 2100, 2400	Y	N	1.500	SCN	4.912	1.720	46	N	.3419	.0019	.334[8]	80.0	160.0	1.696	1.366	CNM	4.923	1.500	46	N	.3414	.0024	.334[8]	80.0	160.0	1.696	1.366
*8-1500, 2100, 2400	N	N	1.500	HAS	4.912	1.720	46	N	.3419	.0019	.396	67.5	156.0	1.696	1.306	CNM	4.923	1.500	46	N	.3414	.0024	.396	67.5	156.0	1.696	1.306
8-2934	N	N	1.500	SCN	4.912	1.720	46	N	.3419	.0019	.404	68.5	156.0	1.696	1.306	SCS	4.923	1.500	46	N	.3414	.0024	.414	68.5	156.0	1.696	1.306
Oldsmobile 8-88, 98	Y	N	1.600	SCS	4.999	1.750	45	N	.3421	.0029	.418	100.0	190.0	1.880	1.480	SCS[9]	4.999	1.563	45	N	.3934	.0034	.418	100.0	190.0	1.880	1.480
Pontiac †8-56-27, 56-28	Y	N	1.500	8440	5.250	1.780	30	N	.3400	.0005	.370	58.0[10]	108.0[10]	1.530[10]	1.160[10]	CNM	5.230	1.500	45	N	.3400	.0005	.370	58.0[10]	108.0[10]	1.530[10]	1.160[11]
*6-56-27, 56-28	Y	N	1.500	8440	5.250	1.780	30	N	.3400	.0005	.400	58.0[11]	112.0[11]	1.530[11]	1.130[11]	CNM	5.230	1.500	45	N	.3400	.0005	.400	58.0[11]	112.0[11]	1.530[11]	1.130[11]
STUDEBAKER-PACKARD CORP.																											
Clipper 8-5640, 5660	Y	N	1.600	SCS	5.712	2.000	29	N	.3725	.0015	.388	92.0	180.0	1.750	1.375	3140[2]	5.690	1.687	44½	N	.3715	.0025	.378	92.0	180.0	1.750	1.375
Packard 8-5680, 5688	Y	N	1.600	SCS	5.712	2.000	29	N	.3725	.0015	.388	92.0	180.0	1.750	1.375	3140[2]	5.690	1.687	44½	N	.3715	.0025	.378	92.0	180.0	1.750	1.375
Studebaker 8-56B, 56H	N	N	1.500	8645	5.156	1.656	45	N	.3438	.0025	.359	50.0	110.0	2.031	1.672	SCS[1]	5.156	1.531	45	N	.3438	.0025	.359	50.0	110.0	2.031	1.672
6-56G	N	N	N	CNS	4.344	1.344	45	N	.3125	.0025	.344	51.5	98.0	1.656	1.313	SCS[1]	4.344	1.281	45	N	.3125	.0025	.344	51.5	98.0	1.656	1.313
8-56J	Y	N	1.600	SCS	5.712	2.000	29	N	.3725	.0015	.398	92.0	180.0	1.750	1.375	3140[2]	5.690	1.688	44½	N	.3715	.0025	.388	92.0	180.0	1.750	1.375

ABBREVIATIONS

*—When equipped with two four-barrel carburetors.
†—When equipped with std. trans.
*—When equipped with auto. trans.

1—Stem only; head, 2112.
2—Or 8645 for stem only; head, 2112.
3—Outer spring only; inner spring, 28.0 at 1.530 with valve closed and 66.0 at 1.090 with valve open.
4—Outer spring only; inner spring, 26.5 at 1.530 with valve closed and 61.0 at 1.150 with valve open.
5—Rich only; Eaton, 8645.
6—Rich only; Eaton, 4.631.
7—Stem only; head, Eaton, 81940, Rich, 82120.
8—.373 when equipped with auto. trans.
9—Thompson only; Eaton, head, silichrome, stem, 8645.
10—Outer spring only; inner spring, 26.0 at 1.148 with valve closed and 61.0 at 1.110 with valve open.
11—Outer spring only; inner spring, 26.0 at 1.148 with valve closed and 64.0 at 1.080 with valve open.

A—Alloy. ACI—Alloy cast iron.
AS—Austenitic steel.
Bo—Both.
CNM—Chromium nickel molybdenum steel.
CNS—Chromium nickel steel.
CS—Chromium steel.
E—Exhaust.
HAS—High alloy steel.
N—No or none.
NCA—Nickel chromium alloy steel.
NMC—Nitrogen treated manganese chromium nickel steel.
SCN—Silicon chromium or nickel chromium steel.
SCS—Silicon chromium steel. Y—Yes.

For Directory of Car Manufacturers listed above, see page 286

VALVE TIMING, LUBRICATION, AND EXHAUST SYSTEMS

PASSENGER CAR MAKE AND MODEL	VALVE TIMING: Operating Tappet Clearance, Intake	Operating Tappet Clearance, Exhaust	Tappet Clearance for Timing, Intake	Tappet Clearance for Timing, Exhaust	Timing Mark Location	TIMING: Intake Opens (°B.T.C.)	Intake Closes (°A.B.C.)	Exhaust Opens (°B.B.C.)	Exhaust Closes (°A.T.C.)	LUBRICATION SYSTEM: Lubrication—Type: Main Bearings	Connecting Rods	Piston Pins	Camshaft Bearings	Tappets	Timing Gear or Chain	Cylinder Walls	Oil Pump Type	Normal Oil Pressure Lbs at M.P.H.	Oil Pressure Gauge—Type	Type Oil Intake	Oil Filter Type	Capacity of Crankcase, Less Filter—qt	Range in Oil Grade Recommended (S.A.E. Nos.) Summer to Subzero	Oil—Type Recommended	EXHAUST SYSTEM: Muffler Type	Exhaust Pipe Diameter (in.)	Tail Pipe Diameter
AMERICAN MOTORS CORP.																											
Hudson 6-35640	.010C	.015C	.010	.015	VD	26.8	99.7	64.9	45.7	P	P	S	P	S	PF	Noz	R	40-30	E	F	Pf	5	20-5W	ML[1]	RF	2	1¾
6-35660	Hyd	Hyd	0	0	Fly	33.7	80.1	73.9	28.4	P	P	S	P	P	DS	DS	R	40-30	E	F	Pf	7	20-5W	MM[3]	RF	2¼	2
8-35680	Hyd	Hyd	0	0	VD	14.0	62.0	54.0	18.0	P	P	OM	P	P	DS	DS	G	45-2800[2]	E	F	Pf	5	20-5W	MM[3]	SF	2¼	2
Metropolitan 4-561, 562										P	P		P	P		J			E	E	Pf	4					
Nash 6-5640	.012HC	.016HC	.015	.015	VD	12.5	51.5	53.5	10.5	P	P	S	P	S	S	HR	G	50-30	E	St	Pf	4	20-5W	ML[1]	RF	2	1¾
6-5660	.012H	.016H	.023	.023	VD	12.5	51.5	53.5	10.5	P	P	P	P	S	S	HR	G	60-3000[2]	E	St	Pf	6	20-5W	ML[1]	RF	2	1¾
8-5680	Hyd	Hyd	0	0	VD	14.0	62.0	54.0	18.0	P	P	OM	P	P	DS	DS	G	45-2800[2]	E	F	Pf	5	20-5W	MM[3]	SF	2¼	2
Rambler 6-5610	.012H	.016H	.015	.015	VD	12.5	51.5	53.5	10.5	P	P	S	P	S	S	HR	G	50-30	E	St	Pf	4	20-5W	ML[1]	RF	2	1¾
CHRYSLER CORP.																											
Chrysler 8-C-71	Hyd	Hyd	VTS	VTS	VD	5.0	87.0	39.0	25.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F	Ff	5	30-5W	.....	RF	2½[5]	2
8-C-72	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	49.0	15.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F	Ff	5	30-5W	.....	RF	2	1¾
8-C-72-300	.015H	.024H	VTS	VTS	VD	35.0	65.0	65.0	25.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F[4]	Ff	5	30-5W	.....	RF	2½[6]	2
De Soto 8-S-23	Hyd	Hyd	VTS	VTS	VD	4.0	76.0	54.0	10.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F	Sh	4	30-5W	.....	RF	2½[7]	2
8-S-24	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	49.0	15.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F	Sh	4	30-5W	.....	RF	2½[7]	2
Dodge 6-D-62	.010H	.010H	.014	.014	VD	12.0	44.0	50.0	6.0	P	P	Mjs	P	JS	MF	MS	R	40-1500[2]	M	F	Sh	4	30-5W	.....	RF	2½[7]	2
8-D-63-1	Hyd	Hyd	VTS	VTS	CP[8]	14.0	50.0	52.0	12.0	P	P	Mjs	P	P	MF	MS	R	60-1500[2]	M	F	Sh	5	30-5W	.....	RF	2	1¾
8-D-63-2, D-63-3	Hyd	Hyd	VTS	VTS	CP[8]	11.0	53.0	49.0	15.0	P	P	Mjs	P	P	MF	MS	R	60-1500[2]	M	F	Sh	5	30-5W	.....	RF	2½[7]	2
Imperial 8-C-70, C-73	Hyd	Hyd	VTS	VTS	VD	15.0	57.0	49.0	15.0	P	P	MS	P	P	MF	MS	R	60-1500[2]	M	F	Sh	5	30-5W	.....	RF	2½[7]	2
Plymouth 6-P-28	.010H	.010H	.014	.014	VD[9]	12.0	44.0	50.0	6.0	P	P	Mjs	P	JS	MF	MF	R	40-1500[2]	E	F	Ff	4½	30-5W	.....	RF	2	1¾
8-P-29 270 cu. in.	Hyd	Hyd	VTS	VTS	CP	14.0	50.0	52.0	12.0	P	P	Mjs	P	P	MF	MF	R	60-1500[2]	E	F	Bp[10]	5	30-5W	.....	RF	1¾	1¾
8-P-29 277 cu. in.	.012H	.020H	VTS	VTS	CP	14.0	50.0	52.0	12.0	P	P	Mjs	P	P	MF	MF	R	60-1500[2]	E	F	Sh	5	30-5W	.....	RF	2½[7]	2
8-P-29-3 Fury	.010H	.018H	VTS	VTS	VD	9.0	55.0	47.0	17.0	P	P	Mjs	P	P	MF	MF	R	60-1500[2]	E	F	Ff	5	30-5W	.....	RF	2½[7]	2
FORD MOTOR CO.																											
Continental 8-60-A	Hyd	Hyd	.....	.....	VD	18.0	72.0	59.0	31.0	P	P	OM	P	Gr	Gr	PS	R	30-2000[2]	E	St	Ff	5	20-5W	MS	RR	1¾	1¾
Ford 6	.019H	.019H	.019H	.019H	VD	24.0	46.0	68.0	2.0	P	P	OM	P	Gr	IP	PS	G	45-2000[2]	E	St	Ff	4	20-5W	ML[11]	RF	2	1¾
8-272 cu. in.	.019H	.019H	.019H	.019H	VD	12.0	54.0	58.0	8.0	P	P	OM	P	Gr	Gr	PS	G	45-2000[2]	E	St	Ff	5	20-5W	ML[11]	RF	2	2
8-292, 312 cu. in.	.019H	.019H	.019H	.019H	VD	12.0	54.0	58.0	8.0	P	P	OM	P	Gr	Gr	PS	G	45-2000[2]	E	St	Ff	5	20-5W	ML[11]	RF	2	1¾
Lincoln 8-73-A, 73-B	Hyd	Hyd	.....	.....	VD	18.0	72.0	59.0	31.0	P	P	OM	P	Gr	Gr	PS	R	30-2000[2]	E	St	Ff	5	20-5W	MS	RR	1¾	
Mercury 8-Custom	.019H	.019H	.019H	.019H	VD	12.0	54.0	58.0	8.0	P	P	OM	P	Gr	Gr	PS	G	45-2000[2]	E	St	Ff	5	20-5W	ML[11]	RF	2	2
8-Monterey, Montclair	.019H	.019H	.019H	.019H	VD	12.0	54.0	58.0	8.0	P	P	OM	P	Gr	Gr	PS	G	45-2000[2]	E	St	Ff	5	20-5W	ML[11]	RF	2	1¾
GENERAL MOTORS CORP.																											
Buick 8-40	Hyd	Hyd	.004[12]	.004[12]	HB	25.0[13]	77.0[13]	75.0[13]	42.0[13]	P	P	S	P	P	Dr	SN	G	35-1600[2]	M	St	Ff	6	30-5W	.....	RF	2½[5]	2
8-50, 60	Hyd	Hyd	.004[12]	.004[12]	HB	30.0	82.0	78.0	44.0	P	P	S	P	P	Dr	SN	G	35-1600[2]	M	St	Ff	6	30-5W	.....	RF	2½[5]	2
8-70	Hyd	Hyd	.004[12]	.004[12]	HB	30.0	82.0	78.0	44.0	P	P	S	P	P	Dr	SN	G	35-1600[2]	M	St	Ff	6	30-5W	.....	RF	2	1¾
Cadillac 8-60, 62, 75	Hyd	Hyd	.....	.....	VD	39.0	105.0	81.0	63.0	P	P	S	P	P	MF	IJ	G	30-30	E	F	Pf	5	20-5W	MS[14]	RR	2	1¾
Chevrolet 6-1500, 2100, 2400	Hyd	Hyd	.....	0	Fly	10.5	53.5	49.0	15.0	P	P	JS	P	P	Noz	JS	G	30-1200[2]	E	St	Pf	5	20-5W	HD	RF	2	1
8-1500, 2100, 2400	Hyd	Hyd	.....	0	VD	18.0	54.0	52.0	20.0	P	P	JS	P	P	P	JS	G	30-1200[2]	E	St	Ff	4	20-5W	HD	RF	2	1
*8-1500, 2100, 2400	Hyd	Hyd	.....	0	VD	26.5	63.5	66.5	23.5	P	P	JS	P	P	P	JS	G	30-1200[2]	E	St	Ff	4	20-5W	HD	RF	2	1
†8-1500, 2100, 2400	.008	.018	.....	0	VD	31.7	92.5	69.6	37.0	P	P	JS	P	P	P	JS	G	30-1200[2]	E	St	Ff	4	20-5W	HD	RF	2	1
8-2934	.008H	.018H	.....	0	VD	21.5	62.5	62.5	23.5	P	P	JS	P	MP	P	JS	G	30-1200[2]	E	St	Ff	5	20-5W	HD	SF	2	1
Oldsmobile 8-88, 98	Hyd	Hyd	.....	.....	CB	11.5	52.5	51.0	13.0	P	P	S	P	P	P	P	G	40-50	E	St	Ff	5	20-5W	HD	RF	2½[5]	2
Pontiac 8-56-27, 56-28	Hyd	Hyd	.....	.....	HB	22.0	67.0	63.0	27.0	P	P	S	P	P	MJ	MJ	G	40-40	M	F	Ff	5	20-5W	MS[14]	RF	2½[5]	2
*8-56-27, 56-28	Hyd	Hyd	.....	.....	HB	27.0	73.0	69.0	31.0	P	P	S	P	P	MJ	MJ	G	40-40	M	F	Ff	5	20-5W	MS[14]	RF	2½[5]	2
STUDEBAKER-PACKARD CORP.																											
Clipper 8-5640, 5660	Hyd	Hyd	.....	.....	VD	14.0	62.0	54.0	18.0	P	P	OM	P	P	PJ	PJ	G	45-2800[2]	E	F	Pf	5	20-5W	ML[1]	RR	2	1¾
Packard 8-5680, 5688	Hyd	Hyd	.....	.....	VD	14.0	62.0	54.0	18.0	P	P	OM	P	P	PJ	PJ	G	45-2800[2]	E	F	Pf	5	20-5W	ML[1]	RR	2	1¾
Studebaker 8-56-B	.024H	.024H	.030	.030	VD	11.0	54.6	51.6	14.0	P	P	S	P	P	P	DJ	G	40-1500[2]	E[15]	F	Pf	5	30-5W	MS	RF	2[7]	1¾
6-56-G	.016C	.016C	.020	.020	VD	15.0	49.0	54.0	10.0	P	P	S	P	P	P	DJ	SG	40-1500[2]	E	F	Pf	5	30-5W	MS	RF	1¾	1¾
8-56-H	.024H	.024H	.030	.030	VD	11.0	54.6	51.6	14.0	P	P	S	P	P	P	DJ	G	40-1500[2]	E[16]	F	Pf	5	30-5W	MS	RF	2	1¾
8-56-J	Hyd	Hyd			VD	14.0	62.0	54.0	18.0	P	P	OM	P	P	PJ	PJ	G	45-2800[2]	M	F	Pf	5	30-5W	MS	RF	2	1¾

ABBREVIATIONS

*—When equipped with auto. trans.
†—When equipped with two four-barrel carburetors.
1—Also MM or MS depending on severity of service.
2—Revolutions per minute.
3—Or MS depending on severity of service.
4—Stationary optional.
5—Main only; branch, 2.
6—3 optional.
7—Main only; branch, 1⅞.
8—Vibration damper when equipped with power package.
9—Savoy and Belvedere only; Plaza, crankshaft drive pulley.
10—Savoy and Belvedere only; Plaza, none.
11—Or MM depending on severity of service.
12—Off seat.
13—Valve timing same as Ser. 50, 60 and 70 when equipped with auto. trans.
14—Or DG.
15—Power Hawk, mechanical.
16—Sky Hawk, mechanical.

Bp—By-pass.
C—Cold. CB—Crankshaft balancer.
DJ—Directed jet.
Dr—Drip from front camshaft bearing.
DS—Directed spray.
E—Electric (indicated by light).
F—Floating. G—Gear.
Ff—Full flow. Gr—Gravity.
Fly—Flywheel. H—Hot.
HB—Harmonic balancer.
HC—Hot or cold.
HD—Heavy duty.
HR—Two squirt holes in rod.
Hyd—Hydraulic lifters, automatic take-up.
IJ—Intermittent jet.
IP—Indexed pressure.
J—Jet.
JS—Jet spray.
M—Mechanical.
MF—Metered flow.
MJ—Metered jet.
Mjs—Metered jet spray.
MP—Metered pressure.
MS—Metered spray.
Noz—Nozzle.
OM—Oil mist.
P—Pressure.
Pf—Partial flow.
PF—Positive feed.
PJ—Pressure jet.
PS—Pressure stream.
R—Rotary.
RF—Reverse flow.
RR—Reverse flow with separate straight through resonator.
S—Splash.
SF—Straight flow.
SG—Spiral gear.
Sh—Shunt.
SN—Splash and nozzle.
St—Stationary.
VD—Vibration damper.
VTS—Valve train solid.

FUEL AND COOLING SYSTEMS

PASSENGER CAR MAKE AND MODEL	FUEL SYSTEM														COOLING SYSTEMS																	
			Fuel Pump			Carburetor						Air Cleaner Type						Capacity				Radiator Hose									
	Fuel Tank Capacity (Gal.)	Recommended Fuel with Standard Head	Location	Pressure Range (lb.)	Vacuum Booster	Make	Model Number	Number Used	Type	Manifold Heat Control	Automatic Choke—Type	Standard	Optional	Radiator Cap Relief Valve Pressure (lb.)	Thermostat Type	Thermostat Starts to Open at (Deg.)	By-pass Recirculation—Type	Radiator Core Type	With Heater (qt.)	Without Heater (qt.)	Full Length Water Jackets	Water All Around Cylinder	Lower Number and Type	Lower Inside Diameter and Length	Upper Number and Type	Upper Inside Diameter and Length	By-Pass Number and Type	By-Pass Inside Diameter and Length
AMERICAN MOTORS CORP.																															
Hudson 6-35640	20	Reg	RRE	4-5	Std	Car	WAI-2009-SA	1	DS	A	Int	D	N	13	Ch	152½	N	FT	14.0	13.0	Y	N	1 Mo	1½	1 Mo	1½	N	.....				
6-35660	20	Reg	RSE	4-5	Std	Car	WDG-2252-S	1	DD	A	Int	D	N	13	Ch	160	N	FT	19.5	18.5	Y	N	2 St	1⅝–4	1 Mo	1½–12½	N	.....				
8-35680	20	Pre	RFE	3½–5½	Std	Car	WDG-2231-S	1	DD	A	Int	OB	N	13	Ch	170	N	FT	28.0	27.0	Y	Y	1 Mo	1½–9¼	1 Mo	1¾–14¾	N	.....				
Metropolitan 4-561, 562	10½	Reg				Zen		1	DS	A	M	OB	N					FT	8.0												
Nash 6-5640	20	Reg	RRE	4-5½	Std	Car	WCD-2350-S	1	DD	A	Int	D	OB	7⁵	Ch	170	N	FT	12.0	11.0	Y	Y	1 Mo	1¼–21¼	1 Mo	1½–12⅞	N	.....				
6-5660	20	Reg	RRE	4-5½	Std	Car	YH-895-S	1	SS	A	Int	D	OB	7⁵	Ch	170	N	FT	18.0	17.0	Y	Y	1 Mo	1¼–21¾	1 Mo	1¾–10⅝	N	.....				
8-5680	20	Pre	RFE	3½–5½	Std	Car	WDG-2231-S	1	DD	A	Int	OB	N	7⁵	Ch	170	N	FT	28.0	27.0	Y	Y	1 Mo	1½–9¼	1 Mo	1¾–14¾	N	.....				
Rambler 6-5610	20	Reg	RRE	4-5½	Std	Car	AS-2349-S	1	DS	A	Int	D	OB	7⁵	Ch	170	N	FT	11.0	10.0	Y	N	1 Mo	1¼–18½	1 Mo	1½–12⅞	N	.....				
CHRYSLER CORP.																															
Chrysler 8-C-71	21	Reg	RFE	5-6½	N	BB	BBD-2312-S	1	DD	A	Int	OB	N	7⁹	Ch	162½	In	Cel	25.0	24.0	Y	Y	1 Mo	1⅝	1 Mo	1⅝	N	.....				
8-C-72	21	Pre	RFE	5-6½	N	Car	WCFB-2314-S	1	DF	A	Int	OB	N	7⁹	Ch	162½	In	FT	26.0	25.0	Y	Y	1 Mo	1⅝	1 Mo	1⅝	N	.....				
8-C-72-300	21½	Pre	RFE	5-6½	N	Car		2	DF	A	Int	OB	PE	7⁹	Ch	162½	In	FT	26.0	25.0	v	Y	1 Mo	1⅝	1 Mo	1⅝	N	.....				
De Soto 8-S-23	21	Reg	RFE	5-6½	N	BB	BBD-2308-S	1	DD	A	Int	OB	N	7⁹	Bp	162½	Ex	Cel	24.0	23.0	Y	Y	1 Mo	1⅝	1 Mo	1⅝	1 Mo	1⅛				
8-S-24	21	Pre	RFE	5-6½	N	Car	WCFB-2311-S	1	DF	A	Int	OB	N	7⁹	Bp	162½	Ex	FT	24.0	23.0	Y	Y	1 Mo	1⅝	1 Mo	1⅝	1 Mo	1⅛				
Dodge 6-D-62	17	Reg	RFE	4-5½	N	Str	WW3-124	1	DD	A	Int	OB	N	7	Ch	157½	In	Cel	14.0	13.0	Y	N	1 Mo	1½	1 Mo	1⅝	N	.....				
8-D-63-1	17	Reg	RFE	5-6½	N	Str	WW3-135	1	DD	A	Int	OB	N	7	Ch	157½	In	C-F	20.0	19.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
8-D-62-2, D-62-3	17	Reg	RFE	5-6½	N	Str	WW3-138	1	DD	A	Int	OB	N	14	Ch	159½	In	F-C	21.0	20.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
Imperial 8-C-70, C-73	21	Pre	RFE	5-6½	N	Car	WCFB-2314-S	1	DF	A	Int	OB	N	7⁹	Ch	162½	In	FT	26.0	25.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
Plymouth 6-P-28	17	Reg	RFE	4-5½	N	BB	BBS-2293-S	1	DS	A	Int	OB	N	7	Ch	157½	In	Cel	14.0	13.0	Y	N	1 Mo	1½	1 Mo	1⅝	N	.....				
8-P-29 270 cu. in.	17	Reg	RFE	6-7	N	BB	BBD-2259-SB	1	DD	A	Int	OB	N	7	Ch	157½	Ex	C-F	20.0	19.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
8-P-29 277 cu. in.	17	Reg	RFE	6-7	N	BB	BBD-2407-S	1	DD	A	MC	OB	N	7	Ch	157½	Ex	C-F	21.0	20.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
8-P-29-3 Fury	17	Pre	RFE	6-7	N	Car	WCFB-2442-S	1	DF	A	MC	OB	N	14	Pe	159½	Ex	FT	21.0	20.0	Y	Y	1 Mo	1½	1 Mo	1⅝	N	.....				
FORD MOTOR CO.																															
Continental 8-60-A	25	Pre	LFE	4½–5½	Std	Fo	.....	1	DF	A	Int	OB	N	13½	Bp	170½	Ex	FT	25.5	23.0	Y	Y	1 Mo	2–12⅛	1 Mo	1¾–12	N	.....				
Ford 6	17½	Reg	RFE	4-5	Opt	Fo	.....	1	DS	A	M	D	OB	13	Ch	159½	In	FT	15.5	14.5	Y	Y	1 Mo	1⅜–17½	1 Mo	1½–8½	N	.....				
8-272 cu. in.	17½	Reg	LFE	4-5	Opt	Fo	.....	1	DD	A	Int	OB	N	13	Ch	159½	Ex	FT	20.0	19.0	Y	Y	1 Mo	2–10½	1 Mo	1½–12½	1 St	⅝–3⅛				
*8-292 cu. in.	17½	Reg	LFE	4-5	Opt	Fo	.....	1	DF	A	Int	OB	N	13	Ch	159½	Ex	FT	20.0	19.0	Y	Y	1 Mo	2–10½	1 Mo	1½–12½	1 St	⅝–3⅛				
†8-40-A, 40-B	17½	Pre	LFE	4-5	Opt		.....	1	DF	A	Int	OB	N	13	Ch	159½	Ex	FT	20.0	21.0	Y	Y	1 Mo	2–13⅛	1 Mo	1¾–19	1 St	⅝–4⅛				
*8-40-A, 40-B	17½	Pre	LFE	4-5	Std		.....	1	DF	A	Int	OB	N	13	Ch	159½	Ex	FT	20.0	21.0	Y	Y	1 Mo	2–13⅛	1 Mo	1¾–19	1 St	⅝–4⅛				
Lincoln 8-73-A, 73-B	20	Pre	LFE	4½–5½	Std	F-H	.....	1	DF	A	Int	OB	N	13½	Ch	160½	Ex	FT	25.4	23.2	Y	Y	1 Mo	2–13½	1 Mo	1¾–11½	1 St	.....				
Mercury 8	18	Reg	LFE	4-5	Std		.....	1	DF	A	Int	OB	N	13½	Ch	159½	Ex	C-F	20.0	19.0	Y	Y	1 Mo	2–11¾	1 Mo	1½–11¾	1 Mo	⅝–3⅛				
GENERAL MOTORS CORP.																															
Buick 8-40	19	Reg	RFE	6½	Std	C-S	WGD[16]	1	DD	A	Int	OB	N	7⁵	Bp	159½	In	TC	19.0	17.5	N	Y	1 Mo	1⅝	1 Mo	1⅝	N	.....				
8-50, 60, 70	19	Pre	RFE	6½	Std	C-R	WCFB[17]	1	DF	A	Int	OB	N	7⁵	Bp	159½	In	TC	19.0	17.5	N	Y	1 Mo	1⅝	1 Mo	1⅝	N	.....				
Cadillac 8-60, 62	20	Pre	RFE	5¼–6½	Std	C-R	WCFB-2333S[18]	120	DF	A	Int	OB	N	13½	Ch	165½	In	TC	19.5	17.5	Y	Y	1 Mo	1¾–9¼	1 Mo	1¾–10⅝	N	.....				
8-75	20	Pre	RFE	5¼–6½	Std	CRA	WCFB-2333S[19]	1	DF	A	Int	OB	N	13½	Ch	165½	In	TC	22.0	17.5	Y	Y	1 Mo	1¾–9¼	1 Mo	1¾–10⅝	N	.....				
Chevrolet 6-1500, 2100, 2400	16		RFE	3½–4½	N	Roc	7009255	1	DS	A	Int	OW	OB	7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–16½	1 Mo	1½–5¼	N	.....				
8-1500, 2100, 2400	16		HFE	4-5¼	N	Roc	7008387	1	DD	A	Int	OB	HD	7	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–12	1 Mo	1½–11	N	.....				
8-2934	16½		RFE	4-5¼	N	Car	WCFB-2419S[24]	2	DF	A	Int	OW	N	6¾	Ch	160	In	Cel	17.0	16.0	Y	Y	1 Mo	1¾–15	1 Mo	1½–16½	N	.....				
Oldsmobile 8-88	20	Pre	EFC	4-5	Std	Roc	2GC	1	DD	A	Int	D	OB	7	Ch	159½	In	Cel	21.5	20.5	Y	Y	1 Mo	1¾–15½	1 Mo	1½–11½	N	.....				
8-Super 88, 98	20	Pre	EFC	4-5	Std	Roc	4GC	1	DF	A	Int	D	OB	7	Ch	159½	In	Cel	21.5	20.5	Y	Y	1 Mo	1¾–15½	1 Mo	1½–11½	N	.....				
Pontiac 8-56-27	20	Pre	LFE	4-5	Std	Roc	7008696	1	DD	A	Int	OM	OB	7	Bp	160	In	Cel	24.3	22.7	Y	Y	1 Mo	2–10½	1 Mo	1¾–12½	2 St	1⅛–3⅞				
8-56-28	20	Pre	LFE	4-5	Std	Roc	7007900	1	DF	A	Int	OM	OB	7	Bp	160	In	Cel	24.3	22.7	Y	Y	1 Mo	2–10½	1 Mo	1¾–12½	2 St	1⅛–3⅞				
STUDEBAKER-PACKARD CORP.																															
Clipper 8-5640	20	Pre	RFE	3½–5½	Std	Car	.....	1	DD	A	Int	OB	N	12	Ch	170	N	FT	26.5	26.0	Y	Y	1 Mo	1¾–13¼	1 Mo	1¾–12⅝	N	.....				
8-5660	20	Pre	RFE	3½–5½	Std	Car	.....	1	DF	A	Int	OB	N	12	Ch	170	N	FT	26.5	26.0	Y	Y	1 Mo	1¾–13¼	1 Mo	1¾–12⅝	N	.....				
Packard 8-5680	20	Pre	RFE	3½–5½	Std	Roc	.....	1	DF	A	Int	OB	N	12	Ch	170	N	FT	27.0	26.0	Y	Y	2 St	1⅜–3²⁷	1 Mo	1¾–12⅝	N	.....				
8-5688	20	Pre	RFE	3½–5½	Std	Roc	.....	2	DF	A	Int	OB	N	12	Ch	170	N	FT	27.0	26.0	Y	Y	2 St	1⅜–3²⁷	1 Mo	1¾–12⅝	N	.....				
Studebaker 8-56-B	18	Reg	LFE	3½–5½	N	Str	WW6-117	1	DD	A	Int	D	OB	13	Ch	170	In	CT	18.5	17.0	Y	Y	1 Mo	1½	1 Mo	1½	N	.....				
8-56-G	18	Reg	RFE	3½–5½	N	Car	WE-2108-S	1	DS	A	Int	D	N	13	Ch	170	In	CT	12.5	11.0	Y	N	1 Mo	1¼	1 Mo	1½	N	.....				
8-56-H	18	Reg	LFE	3½–5½	N	Str	WW6-117	1	DD	A	Int	D31	OB	13	Ch	170	In	CT	18.5	17.0	Y	N	1 Mo	1½	1 Mo	1½	N	.....				
8-56-J	18	Pre	RFE	3½–5½	N	Car	WCFB-2394-S	1	DF	A	Int	OB	N	13	Ch	170	N	CT	26.5	25.0	Y	Y	1 Mo	1½	1 Mo	1¾	N	.....				

ABBREVIATIONS

*—Used in Fairlane models only.
†—Used with std. trans. only.
▲—Used with O.D. and auto. trans. only.
5—13 with air conditioning.
9—14 with air conditioning.
16—Carter only; Stromberg, WW.
17—Carter only; Rochester, 4G.
18—Carter only; AC, 2434-S; Rochester, 7008750, AC, 7008751; Eldorado, Carter, front, 2371-S, rear, 2372-S, AC, rear, 2373-S, Rochester, front, 7008752, rear, 7008753, AC, rear, 7008754.
19—Carter only; AC, 2434-S; Rochester, 7008750, AC, 7008751.
20—Eldorado, 2.
24—Front only; rear, WCFB-2362-S.
27—Second piece, 1¾–5½.
31—Classic and Sky Hawk, oil bath.

A—Automatic.
BB—Ball and Ball (Carter).
Bp—By-pass.
Car—Carter Carburetor Co.
Cel—Cellular.
C-F—Cellular or fin and tube.
Ch—Choke.
C-R—Carter or Rochester.
CRA—Carter, Rochester or A.C.
C-S—Carter or Stromberg.
CT—Cellular tubular.
D—Dry. DD—Downdraft dual throat.
DF—Downdraft four barrel.
DS—Downdraft single throat.
EFC—Engine front cover.
Ex—External.
F-C—Fin and tube or cellular tubing.
F-H—Ford or Holley.
Fo—Ford Motor Co.
FT—Fin and tube.
HD—Heavy duty oil bath.
In—Internal. Int—Integral.
LFE—Left front of engine block.
M—Manual.
MC—In manifold crossover.
Mo—Moulded.
N—No or none. OB—Oil bath.
OM—Oiled crimped metal.
Opt—Optional. OW—Oil wetted.
Pe—Pellet. Pre—Premium.
PE—Paper element. Reg—Regular.
RFE—Right front of engine block.
Roc—Rochester Products Div.
RRE—Right rear of engine block.
RSE—Right side of engine block.
SS—Side draft, single throat.
St—Straight. Std—Standard.
Str—Stromberg Carburetor Div.
TC—Tube and center.
Y—Yes. Zen—Zenith, Ltd.

For Directory of Car Manufacturers listed above, see page 286

DRIVE BELTS, AND ELECTRICAL SUPPLY SYSTEM

PASSENGER CAR MAKE AND MODEL	DRIVE BELTS: Fan: Number Used	Fan: Angle of V (deg.)	Fan: Outside Length (in.)	Fan: Width (in.)	Generator: Angle of V (deg.)	Generator: Outside Length (deg.)	Generator: Width (in.)	BATTERY: Make	Model	S.A.E. Designation	Location	Terminal Grounded	ELECTRICAL SUPPLY SYSTEM: Generator: Make	Model	Type	Ratio—Gen to Cr'k rev. (To—1)	Regulator: Make	Model	Type	Cut-out Relay: Closing Voltage at Generator R.P.M.	Cut-out Relay: Reverse Current to Open (amp.)	Regulated: Voltage	Regulated: Current	Minimum Generator R.P.M. Required	Voltage Test Conditions: Temperature (deg.)	Voltage Test Conditions: Load	Voltage Test Conditions: Other
AMERICAN MOTORS CORP.																											
Hudson 6-35640	1	36	38.8	1/2	•	.....	.....	AL	11-HS-50[1]	2SM	UH	Neg	AL	GJC-7008-A	Sh	1.86	AL	VRX-6008-A	CV	13.0-13.8-1325	8-9	14.6	30-40	2300	H	9-10 amp	N
6-35660	1	47	41.4	25/32	•	.....	.....	AL	11-HS-50[1]	2SM	UH	Neg	AL	GJC-7008-A	Sh	1.86	AL	VRX-6008-A	CV	13.0-13.8-1325	8-9	14.6	30-40	2300	H	9-10 amp	N
6-35680	1	36	36.1	3/8	•	.....	.....	AL	11-HS-60	2SM	UH	Neg	AL	GJC-7002-F	Sh	2.35	AL	VRX-6008-A	CV	13.0-13.8-1325	8-9	14.6	30-40	2300	H	9-10 amp	N
Metropolitan 4-561, 562	1	.....	.....	.....	Luc	.....	.....	.....	.....	.....	USR	.....	Luc	.....	.....	.....	Luc	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nash 6-5640	1	38	41.5	25/32	•	.....	.....	AL	11-HS-50[1]	2SM	UH	Neg	DR	1100323	Sh	2.08	DR	1119122	CV	12.8-1300	1-4	14.5	25	2775	70F	10 amp	N
6-5660	1	38	40.1	25/32	•	.....	.....	AL	11-HS-50[1]	2SM	UH	Neg	AL	GJC-7007-A	Sh	2.08	AL	VRX-6008-A	CV	13.0-13.8-1325	8-9	14.6	30-40	2300	70F	9-10 amp	N
6-5680	1	36	36.1	25/32	•	.....	.....	AL	11-HS-60	2SM	UH	Neg	AL	GJC-7002-F	Sh	2.35	AL	VRX-6008-A	CV	13.0-13.8-1325	8-9	14.6	30-40	2300	70F	9-10 amp	N
Rambler 6-5610	1	38	40.1	25/32	•	.....	.....	AL	11-MS-45[1]	2SM	UFL	Neg	DR	1100323	Sh	2.08	DR	1119122	CV	12.8-1300	1-4	14.5	25	2775	H	10 amp	N
CHRYSLER CORP.																											
Chrysler 8-C-71	2[2]	36½	39.0	5/8	36½	44.4[3]	5/8	A-W	11-HS-60[4]	2SM	UFL	Neg	AL	GJC-7002	SW	2.10	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-C-72, C-72-300	2[2]	36½	39.0	5/8	36½	44.4[3]	5/8	AL	12-H-70	3SM	UFL	Neg	AL	GJC-7002	SW	2.10	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
De Soto 8-S-23, S-24	2[2]	36½	38.0[6]	5/8	36½	42.5[7]	5/8	A-W	11-HS-60[4]	2SM	UL	Neg	AL	GJC-7002	SW	2.10	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
Dodge 8-D-62	1[8]	36½	49.0	5/8	•	.....	.....	A-W	11-HS-50[10]	2SM	UL	Neg	AL	GJC-7002	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	8-9	14.3-14.9	30-40	1300	70F	7 amp	RO
8-D-63-1	1[8]	36½	57.5	5/8	•	.....	.....	A-W	11-HS-50[10]	2SM	UL	Neg	AL	GJC-7001	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	8-9	14.3-14.9	30-40	1300	70F	7 amp	RO
8-D-63-2, D-63-3	1[8]	36½	60.0[9]	5/8	36½	60.0[7]	5/8	A-W	11-HS-60[11]	2SM	UL	Neg	AL	GJC-7001	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	8-9	14.3-14.9	30-40	1300	70F	7 amp	RO
Imperial 8-C-70	4[12]	36½	39.0	5/8	36½	44.8[3]	5/8	AL	12-H-70	3SM	UL	Neg	AL	GGA-6002	SW	2.10	AL	VAT-6201-A	CV	13.0-13.8-840	8-9	14.3-14.9	40-51	840	70F	7 amp	RO
8-C-7[a]	4[12]	36½	39.0	5/8	36½	44.8[3]	5/8	AL	12-H-70	3SM	UL	Neg	AL	GJC-7002	SW	2.10	AL	VRX-6201-A	CV	13.0-13.8-1300	8-9	14.3-14.9	30-40	1300	70F	7 amp	RO
Plymouth 8-P-28	1	36½	49.0	5/8	•	.....	.....	A-W	11-HS-50[10]	2SM	UL	Neg	AL	GJC-7002	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-P-29	1[8]	36½	(13)	5/8	36½	(14)	5/8	A-W	11-HS-50[10]	2SM	UL	Neg	AL	GJC-7001	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
8-P-29-3 Fury	2	36½	55.0	5/8	•	.....	.....	A-W	11-HS-50[10]	2SM	UL	Neg	AL	GJC-7006-B	SW	1.96	AL	VRX-6201-A	CV	13.0-13.8-1300	0-6	14.3-14.9	30-40	1300	70F	7 amp	RO
FORD MOTOR CO.																											
Continental 8-60-A	2	36	(15)	1/2	•	.....	.....	AL	.....	.....	URC	Neg	Fo	FBG-10000-B	Sh	2.00	F-A	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
Ford 6	1[16]	38	(17)	5/8	•	.....	.....	Var	.....	.....	UFR	Neg	Fo	FAR-10000-B	Sh	2.00	F-A	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
8	1	38	45.1	1/2	•	.....	.....	Var	.....	.....	UFR	Neg	Fo	FAS-10000-C	Sh	2.00	F-A	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
8-40-A, 40-B	1	38	40.9	1/2	•	.....	.....	Var	.....	.....	URL	Neg	Fo	FBY-10000-C	Sh	2.00	Fo	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
Lincoln 8-73-A, 73-B	2[18]	38	(19)	1/2	•	.....	.....	Var	.....	.....	URR	Neg	Fo	FBG-10000-B	Sh	2.00	F-A	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
Mercury 8	1	38	45.1	1/2	•	.....	.....	Var	.....	.....	UFR	Neg	Fo	FAS-10000-B	Sh	2.00	F-A	FAP10505-B,C	TC	12.0-12.8	2-6	14.6-15.4	28-32	3000	75F	5 amp	N
GENERAL MOTORS CORP.																											
Buick 8-40, 50, 60, 70	1	40	52.6	5/8	•	.....	.....	DR	3-KMR-62	.....	UL	Neg	DR	1102C08[20]	Sh	2.17	DR	1119003[21]	CV	11.8-13.6	1-6	14.0-15.0	(22)	2300[23]	150F	1-10 amp	VC
Cadillac 8-60, 62, 75	1	40	57.0	5/8	•	.....	.....	DR	3-EMR-70-W	.....	URR	Neg	DR	1102C02	TP	2.15	DR	1119001	CV	11.8-13.6	0-4	14.0-15.0	27-33	2150	H	8-10 amp	FR
Chevrolet 6-1500, 2100, 2400	1	40½	40.5	5/8	•	.....	.....	DR	2-SMR-53-W	.....	URR	Neg	DR	11C0326	SW	2.31	DR	1119000	CV	12.8-1300	.....	14.5	25	2750	OT	10 amp	N
8-1500, 2100, 2400	1	40½	54.2	5/8	•	.....	.....	DR	2-SMR-53-W	.....	URR	Neg	DR	1100321	SW	2.31	DR	1119000	CV	12.8-1300	.....	14.5	25	2950	OT	10 amp	N
8-2934	1	40½	54.8	5/8	•	.....	.....	DR	25-M-53-W	.....	URR	Neg	DR	1102043	SW	2.00	DR	1119001	CV	12.8-1300	.....	14.5	30	2950	OT	10 amp	N
Oldsmobile 8-88, 98	1	36	57.5	5/8	•	.....	.....	DR	3-KMR-62	.....	UL	Neg	DR	1102003	Sh	2.24	DR	1119001	CV	12.8	0-4	14.5	30	3200	80F	1-10 amp	CR
Pontiac 8-56-27, 56-28	1	36	50.8	5/8	•	.....	.....	DR	1890587	.....	UL	Neg	DR	1100304	SW	2.47	DR	1119000	CV	11.8-13.6	.....	14.3	25	2850	H	IIL	FR
STUDEBAKER-PACKARD CORP.																											
Clipper 8-5640, 5660	1	36	56.7	5/8	•	.....	.....	A-W	.....	.....	UL	Neg	AL	GJC-7002-F	Sh	2.25	AL	VRX-6009-A	CV	13.0-13.8	1-4	14.2-14.9	30	2300	70F	10 amp	FR
Packard 8-5680, 5688	1	36	56.7	5/8	•	.....	.....	A-W	.....	.....	UL	Neg	DR	1102003	Sh	2.25	DR	1119123	CV	11.8-13.5	0-4	13.8-14.8	30	2150	70F	FR	N
Studebaker 8-56-B, 56-H	1	39	57.0	5/8	•	.....	.....	Wil	HDW-2SM-50	.....	UL	Neg	DR	1102003	Sh	2.09	DR	1119123	CV	11.8-14.2	1	14.7-15.7	30	2200	70F	10 amp	3500†
8-56-G	1	43	40.0	5/8	•	.....	.....	Wil	HDW-2SM-50	.....	UL	Neg	AL	GJC-7002-F	Sh	1.84	AL	VRX-6008-A	CV	13.0-13.7	1	14.2-14.9	30	2200	70F	10 amp	3500†
8-56-J	1	39	56.7	5/8	•	.....	.....	Wil	HDW-2SM-60	.....	UL	Neg	AL	GJC-7002-F	Sh	2.25	AL	VRX-6008-A	CV	13.0-13.8	1	14.2-14.9	30	2200	70F	10 amp	N

ABBREVIATIONS

•—Same belt is used to drive both fan and generator.
†—rpm.
1—11-HS-60 with air conditioning.
2—Three with power steering and air conditioning; four with power steering only.
3—77.8 with air conditioning.
4—Auto-Lite only; Willard, HO-11-60.
5—Three with power steering and/or air conditioning.
6—41.0 with air conditioning.
7—77.3 with air conditioning.
8—Two with power steering only; three with power steering and air conditioning.
9—37.3 with air conditioning.
10—Auto-Lite only; Willard, HO-11-50; warm climate option on cars with air conditioning; Auto-Lite, 11-MS-45; Willard, MO-11-45.
11—Auto-Lite only; Willard, HO-11-60; warm climate option; Auto-Lite, 11-MS-45; Willard, MO-11-45 (not on cars with air conditioning).
12—Three with air conditioning.
13—60.0 for fan belt; 35.5 with air conditioning.
14—76.0 with air conditioning.
15—46.6 for fan belt; 53.0 with air conditioning.
16—Two with power steering.
17—39.6 for fan belt; 38.4 with power steering.
18—Three with power steering; four with air conditioning; five with power steering and air conditioning.
19—46.2 for fan belt; 37.4 with power steering; 52.6 with air conditioning.
20—11020051 with air conditioning.
21—1119162 with air conditioning.
22—27-33 standard; 32-38 with air conditioning.
23—2600 with air conditioning.
amp—Amperes.
AL—Electric Auto-Lite Co.
A-W—Auto-Lite or Willard.
CR—Cycle regulator.
CV—Current and voltage control.
DR—Delco-Remy Div.
F—Degrees fahrenheit.
F-A—Ford or American Bosch.
Fo—Ford Motor Co.
FR—Fixed resistance method.
H—Hot.
IIL—Ignition and instrument load only.
Luc—Lucas.
N—No or none.
Neg—Negative.
OT—Operating temperature.
RO—Rated output.
Sh—Shunt.
SW—Shunt wound.
TC—Three coil.
TP—Two pole.
UFL—Under hood, front left side.
UFR—Under hood, front right side.
UH—Under hood.
UL—Under hood, left side.
URC—Under hood, rear center.
URL—Under hood, rear left side.
URR—Under hood, rear right side.
USR—Under rear seat, right side.
Var—Various.
VC—Voltage check.
Wil—Willard.

STARTING AND IGNITION SYSTEMS

PASSENGER CAR MAKE AND MODEL	STARTING SYSTEM: MOTOR: Make	Model	Engine Cranking Speed (RPM)	Test Conditions	Lock Test: Amps	Lock Test: Volts	Lock Test: Torque (ft. lb.)	No Load Test: Amps	No Load Test: Volts	No Load Test: RPM (min.)	CONTROL: Switch	CONTROL: Starting Procedure	DRIVE: Engagement—Type	DRIVE: Pinion Meshes	DRIVE: Number Teeth: Pinion	DRIVE: Number Teeth: Flywheel	DRIVE: Flywheel Tooth Face Width	IGNITION SYSTEM: COIL: Make	COIL: Model	COIL: Amps.: Engine Stopped	COIL: Amps.: Engine Idling	DISTRIBUTOR: Make	DISTRIBUTOR: Model	DISTRIBUTOR: Spark Advance Data (at distributor shaft): Centrifugal Advance (Averages): Start (RPM)	DISTRIBUTOR: Spark Advance Data (at distributor shaft): Centrifugal Advance (Averages): Maximum Degrees (at RPM)	DISTRIBUTOR: Spark Advance Data (at distributor shaft): Vacuum Advance Start (in Hg.)	DISTRIBUTOR: Spark Advance Data (at distributor shaft): Vacuum Advance (max. deg. @ in. Hg.)	DISTRIBUTOR: Breaker Gap (in.)	DISTRIBUTOR: Cam Angle (deg.)	DISTRIBUTOR: Breaker Arm Tension (oz.)
AMERICAN MOTORS CORP.																														
Hudson 6-35640	AL	MBG-4101			235	4.0	5.2	50	10.0	6900	Sol	Tik[1]	Ben	R	9	128	.406	AL	CAF-4003	2.75		AL	IAT-4202	0°-300	14.5°-1500	0°-5.25	8.3°-9.0	.019	39	19
6-35660	AL	MDF-6011			240	4.0	6.5	60	10.0	3200	Sol	Tik[1]	Ben	R	9	134	.406	AL	CAF-4003	2.75		AL	IAT-4203A	0°-300	9.0°-2000	0°-9.50	5.0°-10.5	.019	39	19
8-35680	AL	MDF-6008			240	4.0	6.5	60	10.0	3200	Sol	Lsl	SAS	F	9	182	.375	AL	CAD-4004	3.15		AL	IBJ-4001D	0°-300	14.0°-1700	0°-6.00	12.0°-12.5	.016	31	19
Metropolitan 4-561, 562	Luc																	Luc				Luc								
Nash 6-3640	DR	1107647			435	5.8	10.5	75	10.3	6900	Sol	Tik[1]	SA	F	9	149	.438	DR	1115094	3.75	1.70	DR	1110242	0°-300	17.0°-1600	0°-5.00	5.0°-11.0	.016	32	21
6-3660	AL	MDF-6010			240	4.0	6.5	60	10.0	3200	Man[2]	Tik[1]	Ben	R	9	132	.438	AL	CAF-4003			AL	IAT-4301	0°-300	15.0°-1350	0°-5.00	7.0°-14.0	.019	39	19
8-3680	AL	MDF-6008	40		240	4.0	6.5	60	10.0	3200	Sol	Lsl	SAS	F	9	182	.375	AL	CAD-4004			AL	IBJ-4001D	0°-300	14.0°-1700	0°-6.00	12.0°-12.5	.016	31	19
Rambler 6-3610	DR	1107647			435	5.8	10.5	75	10.3	6900	Sol	Tik[1]	Clu	F	9	149	.438	DR	1115094	3.75	1.70	DR	1110242	0°-300	17.0°-1600	0°-5.00	5.0°-11.0	.016	32	21
CHRYSLER CORP.																														
Chrysler 8-C-71	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL	IBJ-4303A	0°-350	14.0°-2020	1°-7.00	11.9°-15.0	.017	31	19
8-C-72	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL	IBK-4301A	0°-350	9.5°-2400	1° 8.25	11.5°-17.0	.017	31	19
8-C-72-300	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL		0°-350				.017	31	19
De Soto 8-S-23	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL	IBJ-4302A	0°-350	6.0°-800	1°-6.00[3]	11.5°-15.0[4]	.017	31	19
8-S-24	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL	IBJ-4302	0°-350	8.5°-2200	1°-6.10[3]	12.5°-15.5[4]	.017	31	19
Dodge 6-D-62	AL	MDG-6001[5]	95	W	210[5]	4.0	5.0[5]	50[5]	10.0	4400[5]	Ben	Tik	FT	F	9	146	.375	AL	CAF-4002	2.40	1.80	AL	IAT-4101B	0°-425	8.0°-1350	1°-6.00	8.0°-14.0	.020	39	19
8-D-63-1	AL	MDF-6002	95	W	240	4.0	6.5	60	10.0	3200	Ben	Tik	FT	F	9	146	.375	AL	CAD-4003	3.10	2.50	AL	IBJ-4301A	0°-350	15.0°-2150	1°-6.00	12.5°-15.0	.017	31	19
8-D-63-2, D-63-3	AL	MDF-6002	95	W	240	4.0	6.5	60	10.0	3200	Ben	Tik	FT	F	9	146	.375	AL	CAD-4003	3.10	2.50	AL	IBJ-4303[6]	0°-350	16.0°-2375[7]	1°-7.25[8]	11.0°-15.0[9]	.017	31	19
Imperial 8-C-70, C-73	AL	MDF-6001	95	W	240	4.0	6.5	60	10.0	3200	Sol	Tik	SSP	F	9	146	.375	AL	CAD-4002	3.10	2.50	AL	IBK-4301A	0°-350	9.5°-2400	1°-7.50	11.5°-17.0	.017		19
Plymouth 6-P-28	AL	MDG-6001[10]	95	W	(11)	4.0	5.0[12]	50[13]	10.0	(14)	Ben	Tik	FT	F	9	146	.375	AL	CAF-4002	2.40	1.80	AL	IAT-4101B	0°-425	8.0°-1350	1°-6.10	8.0°-14.0	.020	39	19
8-P-29	AL	MDG-6002	95	W	210	4.0	5.0	50	10.0	4400	Ben	Tik	FT	F	9	146	.375	AL	CAD-4003	3.10	2.50	AL	IBJ4301A[15]	0°-350	(16)	1°-6.10	(17)	.017	31	19
8-P-29-3 Fury	AL	MDG-6002	95	W	210	4.0	5.0	50	10.0	4400	Ben	Tik	FT	F	9	146	.375	AL	CAD-4003	3.10	2.50	AL		0°-350	12.0°-2300	1°-8.25	11.5°-17.0	.017	38	19
FORD MOTOR CO.																														
Continental 8-60-A	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	152	.375	F-E	FAC12029A	4.50	2.50	Hol	FDU12127B	None	None	1°-.21	13.3°-1.9	.015	27	19
Ford 6	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	146	.375	F-E	FAC12029A	4.50	2.50	Hol	FDR12127A	None	None	1°-.25	13.5°-6.0	.025	37	19
8-272 cu. in.	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	146	.375	F-E	FAC12029A	4.50	2.50	Hol	FDS12127A	None	None	0°-.22	16.5°-4.6	.015	27	19
*6-292 cu. in.	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	146	.375	F-E	FAC12029A	4.50	2.50	Hol	FDT12127B	None	None	0°-.29	13.5°-2.2	.015	27	19
8-40-A, 40-B	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	146	.375	Fo	FAC12029A	4.50	2.50	Hol	FEF12127B	None	None	0°-.29	13.5°-2.2	.015	27	19
Lincoln 8-73-A, 73-B	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	152	.375	F-E	FAC12029A	4.50	2.50	Hol	FDU12127B	None	None	1°-.21	13.3°-1.9	.015	27	19
Mercury 8	Fo	FAR-11001-A	165	RT	550	5.0	15.5	120	12.0	4800	Sol	Tik	Ben	R	9	146	.375	F-E	FAC12029A	4.50	2.50	F-H	FDT12127B	None	None	0°-.27	13.5°-2.2	.015	27	19
GENERAL MOTORS CORP.																														
Buick 8-40, 50, 60, 70	DR	1107646	160	OT	470	5.4	10.5	95	10.1	3500	Sol	Dap	SOG	F	9	180	.573	DR	1115081[18]	4.50	2.50	DR	1110861	0°-375	12.3°-1750	0°-7.50	10.5°-12.0	.015[†]	NR	21
Cadillac 8-60, 62, 75	DR	1107642	60		395	3.5		91	10.6	3900	Sol	Tik	SSO	F	9	176	.500	DR	1115082[18]	3.00	1.25	DR	1110859	0°-475	10.0°-2000	0°-7.50	17.3°-17.5	.019	33	21
Chevrolet 6-1500, 2100, 2400	DR	1107644		OT	415	5.8	12.0	65	10.4	7900	Sol	Tik	PSS	F	9	168	.485	DR	1115085	4.00	1.80	DR	1112403	0°-300	18.0°-1750	0°-5.00	7.5°-10.0	.019	30	21
8-1500, 2100, 2400	DR	1107649		OT	415	5.8	12.0	65	10.4	8900	Sol	Tik	PSS	F	9	168	.485	DR	1115083[20]	4.00	1.80	DR	1110847[21]	0°-300	(22)	0°-6.00[23]	(24)	.019	30	21
8-2934	DR	1107627		OT	415	5.8	12.7	65	10.4	8900	Sol	Tik	PSS	F	9	168	.485	DR	1115091	4.00	1.80	DR	1110872	0°-300	14.0°-1750	0°-8.00	13.8°-15.0	.019	31	21
Oldsmobile 8-88, 98	DR	1107638	150	W	460	5.2	11.0	95	10.1	3500	Sol	Tik	HSO	F	9	176	.500	DR	1115082	4.50	2.00	DR	1115088	0°-650	26.0°-4000	0°-5.50	21.5°-16.0	.016	30	21
Pontiac 8-56-27, 56-28	DR	1107641	138	RT	440	5.4	12.5	85	10.2	3500	Sol	Tik	SGO	F	9	176	(25)	DR	1115085	3.50	1.20	DR	1110862	0°-400	10.0°-3600	0°-5.00	8.0°-13.5	.016	30	21
STUDEBAKER-PACKARD CORP.																														
Clipper 8-5640	AL	MDF-6008	40		320	5.7	11.4	75	10.5	2700	Sol	Tik	SAS	F	9	182	.375	AL	CAD-4004			AL	IBJ-4001D	0°-300	14.0°-1700	0°-6.00	12.0°-12.5	.016	27	19
8-5660	AL	MDF-6008	40		320	5.7	11.4	75	10.5	2700	Sol	Tik	SAS	F	9	182	.375	AL	CAD-4004			AL	IBJ-4001C	0°-300	15.0°-2000	0°-6.75	10.0°-13.0	.016	27	19
Packard 8-5680, 5688	DR	1107656	40		485	4.8	13.3	110	9.8	3250	Sol	Tik	SAS	F	9	182	.375	DR	1115095			DR	1110865	0°-450	12.0°-2000	0°-8.00	E.8°-14.5	.016	30	21
Studebaker 8-56-B	DR	1107650	160	OT				75	11.0	6000	Sol	Tik	Ben	F	9	133	.375	DR	1115097[26]		3.80	DR	1110864	0°-500	24.0°-2200	0°-5.00	16.0°-11.0	.016	31	21
6-56-G	AL	MBG-4103	170	OT				70	11.2	5000	Sol	Tik	Ben	F	9	124	.375	AL	CAF-4004		4.00	AL	IAT-4201	0°-850	14.0°-2800	0°-5.00	18.0°-12.0	.020	39	19
8-56-H	DR	1107650	150	OT				75	11.0	6000	Sol	Tik	Ben	F	9	133	.375	DR	1115097[26]		3.80	DR	1110864	0°-500	24.0°-2200	0°-5.00	16.0°-11.0	.016	31	21
8-56-J	AL	MDF-6008	140	OT	395	6.1	14.6	75	11.0	4400	Sol	Tik	SAS	F	9	182	.375	AL	CAD-4001			AL	IBJ-4001C	0°-300	20.0°-1700	0°-7.00	20.0°-13.0	.015	31	19

ABBREVIATIONS

*—Used in Fairlane models only.
†—Dwell meter for setting point opening is not recommended.
1—Place selector lever in neutral and lift with auto. trans.
2—Solenoid with auto. trans.
3—Early cars only; late cars, 1°-7.25.
4—Early cars only; late cars, 11.5°-17.0.
5—Same as D-63 with auto. trans.
6—IBJ-4303-B with power package.
7—15.0°-2375 with power package.
8—2°-6.00 with power package.
9—8.0°-12.0 with power package.
10—MDF-6002 with power steering and/or auto. trans.
11—210, standard; 240, with power steering and/or auto. trans.
12—6.5 with power steering and/or auto. trans.
13—60 with power steering and/or auto. trans.
14—4400 standard; 3200 with power steering and/or auto. trans.
15—IBJ-4301-B with power package.
16—15.0°-2150 standard; 16.0°-2000 with power package.
17—12.5°-15.5 standard; 11.5°-15.00 with power package.
18—To be used in series with resistance unit 1927809.
20—1115091 with two four-barrel carburetors.
21—1110869 with auto. trans.; 1110860 with two four-barrel carburetors.
22—16.0°-1800 with std. trans.; 14.0°-1750 with auto. trans.
23—0°-8.00 with auto. trans.; none with two four-barrel carburetors.
24—11.0°-12.0 standard; none with two four-barrel carburetors.
25—.500 with std. trans.; .450 or .360 with auto. trans.
26—1115096 on Power Hawk and Sky Hawk.
AL—Electric Auto-Lite Co.
Ben—Bendix.
Clu—Clutch.
Dap—Depress accellerator pedal.
DR—Delco-Remy Div. F—Front.
F-E—Ford and Essex Wire.
F-H—Ford or Holley.
Fo—Ford Motor Co.
FT—Inertia follow through drive.
Hol—Holley Carburetor Co.
HSO—Helical spline sliding gear with overrunning clutch.
Lsl—Place selector lever in neutral or park and lift.
Luc—Lucas. N—No or none.
NR—Usage not recommended by Buick.
OT—Operating temperature.
PSS—Positive shift solenoid.
R—Rear. RT—Room temperature.
SA—Solenoid actuated.
SAS—Solenoid actuated shift.
SGO—Sliding gear with overrunning clutch.
SOC—Solenoid with overrunning clutch.
Sol—Solenoid.
SSO—Spiral spline and overrunning clutch.
SSP—Solenoid shift, positive engagement.
Tik—Turn ignition key beyond "on" position.
W—Completely warmed engine.

For Directory of Car Manufacturers listed above, see page 286

IGNITION TIMING, SPARK PLUGS, AND CLUTCHES

PASSENGER CAR MAKE AND MODEL	IGNITION TIMING		SPARK PLUGS				CABLE				CLUTCH (PEDAL OPERATED)																		
																		Facing							Release Bearing		Torsional Dampening	
	C/s deg. @ RPM	Mark Location	Make and Model	Thread (mm)	Tightening Torque (ft. lb.)	Gap	Conductor Type	Insulation Type	Spark Plug Protector	Suppression Type	Make	Type	Fluid Coupling	Semi-centrifugal	Type Pressure Plate Springs	Total Plate Pressure	No. of Driven Discs	Material	Inside Diam. (In.)	Outside Diam. (In.)	Effective Area (Sq. In.)	Thickness (In.)	Number Required	Engagement Cushioning Method	Type	Method of Lubrication	Method	Friction Material
AMERICAN MOTORS CORP.																													
Hudson 6-35640	TC-580	VD	Ch-H-10	14	30[1]	.032	SC	Ne	Ne	DC	BB	DP	N	N	Co	1242	1	Mo	6.1	9.1	71.9	.285	1	WS	Ba	S	Spr	SW
6-35660	TC-560	Fly	Ch-H-11	14	25	.030	Cop	Ne	Ne	DC	BB	DP	N	N	Co	1734	1	.....	6.5	10.3	98.7	.125	2	WS	Ba	P	Spr	SS
6-35680	5B	VD	Ch-N-18[2]	14	30	.036[3]	CT	Ne	Hy	R	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Metropolitan 4-561, 562	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	BB	DP	.....	.....	.....	.....	.....	.....	.....	8.0	.....	.....	.....	.....	CR	N	.....	.....
Nash 6-5640	TC	VD	AL-7J	14	30	.030	SC	Ne	Ne	HT	BB	DP	N	N	Co	1300	1	.....	5.1	8.5	72.2	.135	2	Cfs	Ba	P	Spr	SS
6-5660	4A	VD	AL-A7	14	30	.030	SC	Ne	Ne	DC	BB	DP	N	N	Co	1395	1	.....	7.0	10.0	90.1	.125	2	Cfs	Ba	P	Spr	SS
6-5680	5B	VD	Ch-N-18[2]	14	30	.036[3]	CT	Ne	Hy	R	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rambler 6-5610	TC	VD	AL-7J	14	30	.030	SC	Ne	Ne	HT	BB	DP	N	N	Co	1300	1	.....	5.1	8.5	72.2	.135	2	Cfs	Ba	P	Spr	55
CHRYSLER CORP.																													
Chrysler 8-C-71	2B[4]	VD	AL-AR-52	14	31	.035	StC	RN	NC	SP,Dis	BB	DP	N	N	Co	1982	1	MWA	6.0	10.0	100.5	.125	2	Cfs	Ba	S	CS	.....
8-C-72	4B	VD	AL-AGR-42	14	31	.035	StC	RN	ETC	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8-C-72-300	.....	VD	AL	14	31	.035	StC	RN	ETC	SP,Dis	BB	DP	N	N	Co	2000	1	MWA	6.5	11.0	123.4	.125	2	Cfs	Ba	S	CS	.....
De Soto 8-S-23	8B	VD	AL-AR-52	14	31	.035	StC	RN	ETC	SP,Dis	BB	DP	N	N	Co	1962	1	MWA	6.0	10.0	100.5	.125	2	Cfs	Ba	S	CS	.....
8-S-24	4B	VD	AL-AR-52	14	31	.035	StC	RN	ETC	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dodge 6-D-62	2B	VD	AL-AR-80	14	31	.035	StC	RN	NC	SP,Dis	B-A	DP	N	N	Co	1389[6]	1	MWA	6.0	9.3	77.8	.125[7]	2	Cfs	Ba	S	CS	.....
8-D-63-1	4B	FP[5]	AL-AR-52	14	31	.035	StC	RN	NC	SP,Dis	BB	DP	N	N	Co	1962	1	MWA	6.0	10.0	100.5	.125	2	Cfs	Ba	S	CS	.....
8-D-63-2, D-63-3	6B	FP[5]	AL-AR-52	14	31	.035	StC	RN	NC	SP,Dis	BB	DP	N	N	Co	1962	1	MWA	6.0	10.0	100.5	.125	2	Cfs	Ba	S	CS	.....
Imperial 8-C-70, C-73	4B	VD	AL-AGR-42	14	31	.035	StC	RN	ETC	SP,Dis	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth 6-P-28	2B	VD[8]	AL-AR-80	14	31	.035	StC	RN	N	SP,Dis	B-A	DP	N	N	Co	1389[6]	1	MWA	6.0	9.3	77.8	.125[7]	2	Cfs	Ba	S	CS	.....
8-P-29	4B	FP	AL-AR-52	14	31	.035	StC	RN	NC	SP,Dis	BB	DP	N	N	Co	1639	1	MWA	6.8	10.0	85.5	.125	2	Cfs	Ba	S	CS	.....
8-P-29-3 Fury	4B	VD	AL-4S-250	14	31	.035	StC	RN	NC	SP,Dis	BB	DP	N	N	Co	1962	1	MWA	6.0	10.0	100.5	.125	2	Cfs	Ba	S	CS	.....
FORD MOTOR CO.																													
Continental 8-60-A	5B-400	VD	Ch-860	18	25	.034	LCR	BN	Ne	HT,G,OG,FG,VR,W	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ford 6	4B[9]	VD	Ch-870	18	25	.034	SSt	NS	NC	.....	Lg	DP	N	Y	Co	1230	1	WA	6.0	9.5	85.2	.125	2	TS	Ba	P	Spr	St
8	3B[9]	VD	Ch-870	18	25	.034	SSt	NS	NC	.....	Lg	DP	N	Y	Co	1278	1	WA	6.8	10.0	85.5	.125	2	TS	Ba	P	Spr	St
8-40-A, 40-B	3B[9]	VD	Ch-870	18	25	.034	SSt	NS	NC	.....	Lg	DP	N	Y	Co	1395	1	WA	7.0	11.0	113.1	.125	2	TS	Ba	P	Spr	St
Lincoln 8-73-A, 73-B	5B	VD	Ch-860	18	25	.034	SSt	NS	NC	.....	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mercury 8	3B[9]	VD	Ch-870	18	25	.034	SSt	NS	NC	.....	BB	DP	N	N	Co	1757	1	WA	6.5	10.3	98.6	.125	2	BS	Ba	P	Spr	St
GENERAL MOTORS CORP.																													
Buick 8-40	5B	HB	AC-44	14	25	.033	StC	Ne	NB	Dis,Co,G,VR	Bui	DP	N	N	Co	1845	1	Wov	6.5	10.5	106.8	.125	2	LS	Ba	S	Spr	Fib
8-50, 60, 70	5B	HB	AC-44	14	25	.033	StC	Ne	NB	Dis,Co,G,VR	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cadillac 8-60, 62, 75	5B-400	CB	AC-44	14	23	.035	.....	Ne	Ne	R,G,Co,VR	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chevrolet 6-1500, 2100, 2400	TC-425	Fly	AC-44	14	23	.036	LCE	RN	Pl	HT	C-B	DP	N	N	Dia	1388	1	WA	6.0	9.5	85.2	.135	2	Spr	Ba	S	Spr	.....
8-1500, 2100, 2400	4B-425	VD	AC-44	14	23	.036	LCE	RN	Pl	HT	C-B	DP	N	N	Dia[10]	1388[11]	1	WA	6.0[12]	10.0[13]	100.5[14]	.135	2	Spr	Ba	S	Spr	.....
8-2934	4B-425	VD	AC-C-43	14	23	.036	LCE	RN	NJ	HT	C-B	DP	N	N	Co	1600	1	WA	6.5	10.5	106.8	.133	2	Spr	Ba	S	Spr	.....
Oldsmobile 8-88	5B-850	CP	AC-44	14	26	.030	.....	Ne	NSl	.....	Lg	DP	N	Y	Com	1400	1	WM	7.0	11.0	56.5	.137	2	FS	Ba	F	Spr	St
8-98	5B-850	CP	AC-44	14	26	.030	.....	Ne	NSl	.....	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pontiac 8-56-27, 56-28	5B-460	HB	AC-44	14	25	.036	CTh	Ne	BR	HT,E,W,G,VR	I-L	DP	N	N	Dia	1613	1	MWA	6.8	10.0	85.8	.125	2	Spr	Ba	S	C-F	SS
STUDEBAKER-PACKARD CORP.																													
Clipper 8-5640, 5663	5B	VD	Ch-N-18	14	28	.035	CT	Ne	Hy	R,G,VR,E,Bo,Co	Lg	DP	N	Y	Co	1656	1	WA	7.0	11.0	133.1	.125	2	TD	Ba	P	Spr	MA
Packard 8-5683	10B	VD	Ch-N-18	14	28	.035	CT	Ne	Hy	R,G,VR,E,Bo,Co	Lg	DP	N	Y	Co	1818	1	WA	7.0	11.0	133.1	.125	2	TD	Ba	P	Spr	MA
8-5689	10B	VD	Ch-N-18	14	28	.035	CT	Ne	Hy	R,G,VR,E,Bo,Co	N	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Studebaker 8-56-B	4B	VD	Ch-H-11	14	28	.036	.....	Ne	SSI	Co,G,VR,R,E,Bo	BB	DP	N	N	Co	1500	1	MA	6.0	10.0	100.0	.125	2	PS	Ba	P	CS	SW
8-56-G	2B	VD	Ch-J-7	14	28	.031	.....	Ne	SSI	Co,G,VR,DC,E,Bo	BB	DP	N	N	Co	1170	1	MA	6.1	9.1	72.0	.125	2	PS	Ba	P	CS	SW
8-56-H	4B	VD	Ch-H-11	14	28	.036	.....	Ne	SSI	Co,G,VR,R,E,Bo	BB	DP	N	N	Co	1734	1	MA	6.5	10.3	99.0	.125	2	PS	Ba	P	CS	SW
8-56-J	5B	VD	Ch-N18-67B	14	28	.036	CT	Ne	Hy	Co,G,VR,DC,E	Lg	DP	N	Y	Co	1467	1	WA	7.0	11.0	133.1	.125	2	TD	Ba	P	CS	MA

ABBREVIATIONS

1—25 with aluminum head.
2—Late models only; early models, Ch-N-8.
3—Late models only; early models, .035.
4—4B with power package.
5—Vibration damper with power package.
6—Borg & Beck only; Auburn, 1412.
7—Borg & Beck only; Auburn, .115.
8—P-28-2 and P-28-3 only; P-28-1 on fan drive pulley.
9—6B with auto. trans.
10—Coil springs with two four-barrel carburetors.
11—1755 with two four-barrel carburetors.
12—6.5 with two four-barrel carburetors.
13—10.5 with two four-barrel carburetors.
14—106.8 with two four-barrel carburetors.

A—After top center.
AC—A.C. Spark Plug Div.
AL—Electric Auto-Lite Co.
B—Before top center. **Ba**—Ball.
B-A—Borg & Beck or Auburn.
BB—Borg & Beck Div.
BN—Buna-S, outer jacket neoprene.
Bo—Car body.
BR—Butyl rubber boot.
BS—Borglite disc with spring vibration damper.
Bui—Buick Motor Div.
CB—Crankshaft balancer.
C-B—Chevrolet or Borg & Beck.
C-F—Coil springs and friction.
Cfs—Crimped flat springs.
Ch—Champion Spark Plug Co. **Co**—Coil.
Com—Compression. **Cop**—Copper.
CP—Crankshaft pulley.
CR—Carbon ring. **CS**—Coil springs.
CT—Copper wire tinned.
CTh—Carbonized thread.
DC—Distributor cap.
Dia—Diaphragm. **DP**—Dry plate.
Dis—Distributor. **E**—Engine block.
ETC—Enclosed tubes, covered.
F—Fitting. **Fib**—Fibre.
FG—Fuel gage. **Fly**—Flywheel.
FP—Fan drive pulley. **FS**—Flat springs.
G—Generator. **HB**—Harmonic balancer.
HT—Coil high tension lead.
Hy—Hypalon.
I-L—Inland with Long driven member.
LCE—Linen core impregnated with an electrical conducting material.
LCR—Linen core with rayon overbraid, saturated in carbon.
Lg—Long Mfg. Div. **LS**—Leaf spring.
MA—Molded asbestos. **Mo**—Molded.
MWA—Molded woven asbestos.
N—No or none.
NB—Neoprene boot and sheet metal cover.
NC—Neoprene covers. **Ne**—Neoprene.
NJ—Neoprene jacket.
NS—Neoprene sheath.
NSl—Neoprene sleeve. **OG**—Oil guage.
P—Pre-lubricated. **Pl**—Plastic.
PS—Plate cushion springs. **R**—Rotor.
RN—Rubber with neoprene jacket.
S—Sealed.
SC—Steel core wire. **Spr**—Springs.
SP—Spark plugs. **SS**—Steel on steel.
SSI—Semi-skirt integral with cable.
SSt—Stranded steel.
St—Steel. **StC**—Stranded copper.
SW—Steel washer.
TC—Top center. **TD**—Torbend disc.
TS—Torbend disc with spring vibration damper.
VD—Vibration damper.
VR—Voltage regulator.
W—Wheels. **WA**—Woven asbestos.
WM—Woven molded. **Wov**—Woven.
WS—Waved spring steel plate. **Y**—Yes.

LAMP BULBS, FUSES AND CIRCUIT BREAKERS

PASSENGER CAR MAKE AND MODEL	LAMP BULBS (Trade Number)															FUSES AND CIRCUIT BREAKERS (Trade Number)												
	Headlamp	Headlamp Beam Indicator	Parking Light	Tail Light	Stop Light	Direction Indicator: Front	Direction Indicator: Rear	Direction Indicator: Tail Tale	License Plate Light	Instrument Light	Ignition Lock Light	Dome Light	Clock Light	Courtesy Light	Trunk Compartment Light	Headlamp	Headlamp Beam Indicator	Parking Light	Tail Light	Stop Light	Direction Indicator	License Plate Light	Instrument Light	Ignition Light	Dome Light	Clock	Clock Light	Courtesy Light	Trunk Compartment Light
AMERICAN MOTORS CORP.																												
Hudson 6-35640, 35660, 8-35680	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	89	(4)	(5)	N	12CB	(6)	12CB	(2)	30CB	(3)	(2)	(2)	N	(7)	N	(2)	N	N
Metropolitan 4-561, 562					(1)	(2)	(3)																					
Nash 6-5640, 5660, 8-5680	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	89	(4)	(5)	N	12CB	(6)	12CB	(2)	30CB	(3)	(2)	(2)	N	(7)	N	(2)	N	N
Rambler 6-5610	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	N	89	57	(5)	N	12CB	(6)	12CB	(2)	30CB	(3)	(2)	(2)	N	AGW7½	N	(2)	(5)	N
CHRYSLER CORP.																												
Chrysler 8-C-71, C-72, C-72-300	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	57	1004	57	1004	1003	15CB	(6)	6CB	(2)	6CB	.....	(2)	(2)	(2)	(3)	IP	(2)	(3)	(3)
De Soto 8-S-23, S-24	5400	57	1034	67	1034	(2)	(3)	57	67	57	57	1004	57	1004	1003	15CB	(6)	6CB	(2)	6CB	.....	(2)	(2)	(2)	(3)	IP	(2)	(3)	(3)
Dodge 6-D-62, 8-D-63	5400	57	67	1034	(1)	1034	(3)	57	67	57	57	1004	57	1004	1003	15CB	(6)	6CB	(2)	6CB	.....	(2)	(2)	(2)	(3)	IP	(2)	(3)	(3)
Imperial 8-C-70, C-73	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	57	1004	57	1004	1003	15CB	(6)	6CB	(2)	6CB	.....	(2)	(2)	(2)	(3)	IP	(2)	(3)	(3)
Plymouth 6-P-28, 8-P-29	5400	57	67	1034	(1)	1034	(3)	57	67	57	57	1004	53	.....	1003	15CB	(6)	(6)	(6)	(6)	N	(6)	(6)	(6)	(6)	IP	(6)	(6)	(6)
FORD MOTOR CO.																												
Continental 8-60A	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	(4)	1003	(4)	89	68	30CB	12CB	(8)	(8)	(8)	SFE7½	(8)	(8)	(4)	SFE7½	(5)	(4)	(5)	(8)
Ford 6, 8	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	57	1003	57	(7)	89	12CB	(6)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	(7)	IAG1	(2)	(7)	(2)
8-40A, 40B	5400	57	1034	1034	(1)	(2)	(3)	53	67	57	57	N	57	(7)	89	12CB	(6)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	N	MNF	(2)	(7)	N
Lincoln 8-73A, 73B	5400	57	67	1034	(1)	1073	(3)	57	67	57	57	1003	(4)	89	67	12CB	(6)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	(7)	MNF	(2)	(7)	(2)
Mercury 8	5400	57	1034	1034	(1)	(2)	(3)	57	67	57	57	1003	57	(7)	89	12CB	(6)	12CB	(2)	(2)	SFE7½	(2)	(2)	(2)	(7)	IAG[9]	(2)	(7)	(2)
GENERAL MOTORS CORP.																												
Buick 8-40, 50, 60, 70	5400	53	1034	1034	(1)	(2)	(3)	53	67	57	N	1004	57	(7)	89	22CB	(6)	(6)	(6)	SFE9	(3)	(6)	(6)	N	SFE20	AGA2	(6)	(7)	(5)
Cadillac 8-60, 62, 75	.....	57	1034	1034	(1)	(2)	(3)	57	67	57	53	1004	57	90	89	20CB	(6)	(6)	(6)	(6)	SFE6	(6)	(6)	(6)	(6)	AGC25	(6)	(6)	(10)
Chevrolet 6, 8-1500, 2100, 2400	5400	53	1034	1034	(1)	(2)	(3)	53	67	57	53	1004	67	89	93	13CB		(6)	13CB	(1)	(3)	(1)	(1)	(1)	(1)	.....	(1)	(1)	(1)
8-2934	5400	53	1034	1034	(1)	(2)	(3)	N	67	57	53	N	57	90	N	13CB	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	N	(6)	(6)	(6)	N
Oldsmobile 8-88	.....	53	1034	1034	(1)	(2)	(3)	57	67	57	57	1004	57	90	89	25CB	(6)	(6)	SFE9	AGC25	SFE9	SFE9	AGA2	SFE9	AGC25	AGA1	AGA2	AGC25	SFE9
8-98	.....	53	1034	1034	(1)	(2)	(3)	57	67	57	57	90	57	90	89	25CB	(6)	(6)	SFE9	AGC25	SFE9	SFE9	AGA2	SFE9	AGC25	AGA1	AGA2	AGC25	SFE9
Pontiac 8-56-27, 56-28	.....	53	1034	1034	(1)	(2)	(3)	57	67	57	53	1004[11]	57	89	1003	22CB	(6)	(6)	SFE7½	SFE7½	SFE7½	(1)	SFE4	(4)	(3)	SFE7½	(4)	(3)	(3)
STUDEBAKER-PACKARD CORP.																												
Clipper 8-5640, 5660	5400	57	1034	1034	(1)	57	57	57	67	57	53	1004	57	1004	89	22CB	(6)	(6)	(6)	SFE20	SFE9	(6)	(6)	(6)	(3)	A8A2	(6)	(3)	(6)
Packard 8-5680, 5688	5400	57	1034	1034	(1)	57	57	57	67	57	53	1004	57	1004	89	22CB	(6)	(6)	(6)	SFE20	SFE9	(6)	(6)	(6)	(3)	A9A2	(5)	(3)	(6)
Studebaker 6-56G, 8-56B, 56H, 56J	5400	53	1034	1034	(1)	(2)	(3)	53	67	57	.....	1004	57	.....	1003	20CB	(6)	(6)	(6)	15CB	SFE9	(6)	(6)	.....	(3)	IAG3	(6)	.....	(6)

ABBREVIATIONS

1—On tail light.
2—On parking light.
3—On stop light.
4—On instrument light.
5—On dome light.
6—On headlamp.
7—On map light.
8—On head lamp beam indicator.
9—Electric wind only; Motochron, not fused.
10—On glove compartment light.
11—Custom cars use 90 bulb.
CB—Circuit breaker.
IP—Internally protected.
MNF—Motochron, not fused.
N—No or none.

For Directory of Car Manufacturers listed above, see page 286

TRANSMISSIONS—Conventional and Conventional with Overdrive

PASSENGER CAR MAKE AND MODEL	TYPE			CONVENTIONAL TRANSMISSION														OVERDRIVE												
					Ratios								Lubricant											Lubricant						
	Conventional	Conventional with O.D.	Automatic	No. of Forward Speeds	First	Second	Third	Reverse	Constant Mesh Gears in 2nd	Spur Gear Used In	Helical Gears Used In	Synchronous Meshing in 2nd and 3rd Gears	Capacity (pt.)	Type Recommended	SAE Viscosity Number: Summer	SAE Viscosity Number: Winter	SAE Viscosity Number: Extreme Cold	Type	If Planetary—No. of Pinions	Manual Lockout	Downshift Accelerator Control	Minimum Cut-in Speed (mph)	Gear Ratio (to—1)	Capacity (pt.)	Separate Filter	Type Recommended	SAE Viscosity Number: Summer	SAE Viscosity Number: Winter	SAE Viscosity Number: Extreme Cold
AMERICAN MOTORS CORP.																														
Hudson 6-35840	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	1¼	N	SM	90	80	80
6-35680	Std	Opt	Opt	3	2.57	1.55	1.00	3.49	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	1¼	N	SM	90	80	80
6-35680	NA	NA	Std	NA														NA												
Metropolitan 4-561, 562	Std	NA	NA	3														NA												
Nash 6-3640	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	1¼	N	SM	90	80	80
6-3680	Std	Opt	Opt	3	2.57	1.55	1.00	3.49	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	1¼	N	SM	90	80	80
6-3680	NA	NA	Std	NA														NA												
Rambler 6-3610	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	1,2,R	Y	2¼	SM	90	80	80	P	3	Y	Y	25	.700	1¼	N	SM	90	80	80
CHRYSLER CORP.																														
Chrysler 8-C-71	Std	NA	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	FG	80	80	80	NA												
8-C-72	NA	NA	Std	NA														NA												
8-C-72-300	Opt	NA	Std	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	FG	80	80	80	NA												
De Soto 8-S-23	Std	Opt	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	EO	10W	10W	10W	P	3	Y	Y	28	.700	¾	N	EO	10W	10W	10W
8-S-24	NA	NA	Std	NA														NA												
Dodge 8-D-62	Std	Opt	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	25	.700	¾	N	GL	80	80	80
8-D-63	Std	Opt	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	26	.700	¾	N	GL	80	80	80
Imperial 8-C-70, C-73	NA	NA	Std	NA														NA												
Plymouth 6-P-28	Std	Opt	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	25	.700	¾	N	GL	80	80	80
8-P-29—All Models	Std	Opt	Opt	3	2.50	1.68	1.00	3.20	Y	N	AS	Y	2¾	GL	80	80	80	P	3	Y	Y	26	.700	¾	N	GL	80	80	80
FORD MOTOR CO.																														
Continental 8-60A	NA	NA	Std	NA																										
Ford 6	Std	Opt	Opt	3	2.78[1]	1.61[2]	1.00	3.38[3]	Y	N	AS	Y	3	ME	80	80	80	NA												
8-272 cu. in.	Std	Opt	Opt	3	2.57	1.63[5]	1.00	3.13[7]	Y	N	AS	Y	3	ME	80	80	80	P	3	Y	Y	27	.700	1½	N	ME	80	80	80
*8-292 cu. in.	Std	Opt	Opt	3	2.32[4]	1.48[6]	1.00	2.82[8]	Y	N	AS	Y	3	ME	80	80	80	P	3	Y	Y	28	.700	1½	N	ME	80	80	80
8-40A, 40B	Std	Opt	Opt	3	2.32	1.48	1.00	2.82	Y	N	AS	Y	3	MP	80	80	75	P	3	Y	Y	27	.720	1½	N	MP	80	80	75
Lincoln 8-73A, 73B	NA	NA	Std	NA														NA												
Mercury 8	Std	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	AS	Y	3¼	ME	80	80	80	P	4	Y	Y	28	.720	1¼	N	ME	80	80	80
GENERAL MOTORS CORP.																														
Buick 8-40	Std	NA	Opt	3	2.39	1.53	1.00	2.53	Y	N	AS	Y	2½	MP	90	90	90	NA												
8-50, 60, 70	NA	NA	Std	NA														NA												
Cadillac 8-60, 62, 75	NA	NA	Std	NA														NA												
Chevrolet 6-1500, 2100, 2400	Std	Opt	Opt	3	2.94	1.68	1.00	2.94	Y	N	AS	Y	2	MO	90	90	80	P	3	Y	Y	29	.700	1	. . .	MO	90	90	80
8-1500, 2100, 2400	Std	Opt	Opt	3	2.94[9]	1.68[10]	1.00	2.94[9]	Y	N	AS	Y	2	MO	90	90	80	P	3	Y	Y	29	.700	1	. . .	MO	90	90	80
8-2934	Std	NA	Opt	3	2.94	1.68	1.00	2.94	Y	N	AS	Y	2	MO	90	90	80	NA												
Oldsmobile 8-88	Std	NA	Opt	3	2.39	1.53	1.00	2.53	Y	N	AS	Y	2½	MP	80	80	80	NA												
8-98	NA	NA	Std	NA														NA												
Pontiac 8-56-27, 56-28	Std	NA	Opt	3	2.39	1.53	1.00	2.53	Y	N	AS	Y	2½	EP	80-90	80-90	80-90	NA												
STUDEBAKER-PACKARD CORP.																														
Clipper 8-5640, 5680	Opt	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	1,2,R	Y	3¼	MP	90	90	80	P	4	Y	Y	22	.722	1¼	Y	MP	90	90	80
Packard 8-5680	Opt	Opt	Opt	3	2.49	1.59	1.00	3.15	Y	N	1,2,R	Y	3¼	MP	90	90	80	P	4	Y	Y	22	.722	1¼	Y	MP	90	90	80
8-5688	NA	NA	Std	NA														NA												
Studebaker 8-56B	Std	Opt	Opt	3	2.57	1.55	1.00	3.48	Y	N	AS	Y	2⅔	MO	90	90	90	P	3	Y	Y	25	.700	1	N	MO	90	90	90
6-56G	Std	Opt	Opt	3	2.61	1.63	1.00	3.54	Y	N	AS	Y	1⅔	MO	90	90	90	P	3	Y	Y	25	.700	1[12]	N	MO	90	90	90
8-56H	Std	Opt	Opt	3	2.57[13]	1.55[12]	1.00	3.48[13]	Y	N	AS	Y	2⅔[14]	MO	90	90	90	P	3[15]	Y	Y	25[16]	.700[17]	1	N	MO	90	90	90
8-58J	NA	Std	Opt	3	2.49	1.59	1.00	3.15	Y	N	AS	Y	1⅔	. . .	. . .	. . .	. . .	P	4	Y	Y	22	.722	1¼	N	MO	90	90	90

ABBREVIATIONS

*—Used in Fairlane models only.
1—2.80 with overdrive.
2—1.69 with overdrive.
3—3.80 with overdrive.
4—2.37 with overdrive.
5—1.55 with overdrive.
6—1.43 with overdrive.
7—3.49 with overdrive.
8—3.21 with overdrive.
9—2.20 with two four-barrel carburetors.
10—1.31 with two four-barrel carburetors.
11—2.49 on Classic with overdrive.
12—1.59 on Classic with overdrive.
13—3.15 on Classic with overdrive.
14—3.7 on Classic with overdrive, including overdrive.
15—4 on Classic with overdrive.
16—22 on Classic with overdrive.
17—.722 on Classic with overdrive.
AS—All speeds.
EO—Engine oil.
EP—Extreme pressure.
FG—Fluid gear lubricant.
GL—Gear lubricant.
ME—Mild extreme pressure.
MO—Mineral oil.
MP—Multi-purpose.
N—No or none.
NA—Not available.
Opt—Optional.
P—Planetary.
R—Reverse.
SM—Straight mineral.
Std—Standard.
Y—Yes.

AUTOMATIC TRANSMISSIONS

PASSENGER CARS MAKE AND MODEL	TRADE NAME	Type	Manual Selector Positions (left to right)	GEAR RATIOS: 1st or Low Range	2nd or Drive Range	3rd or Intermediate Range	4th Speed	Reverse	Shifting Within Drive Range by Accelerator and Governor	Governor-Forced Shift	Downshift Up to (mph)	TORQUE CONVERTER: Number of Elements	Max. Ratio at Stall at Engine RPM	Mechanical Lockup: Provided	Speed Range (mph)	Releases at (mph)	Type of Cooling	Anti-Creep Device	LUBRICATION: Capacity - Refill (qt.)	Type Recommended	Grade (S A E. No.): Summer	Winter	Extreme Cold
AMERICAN MOTORS CORP.																							
Hudson 6-35640	Hydramatic	FCG	N,D3,D4,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							8½	•	•	•	•
6-35660	Hydramatic	FCG	N,D3,D4,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							11	•	•	•	•
8-35680	Ultramatic	TCG	P,N,D1,D2,L,R	1.82[1]	1.82[1]	1.00[1]	No	1.63[1]	Y	Y	45	4	2.90–16.50	Y	24–70	20	WC	No	11	•	•	•	•
Metropolitan 4-561, 562	Not Available																						
Nash 6-5640	Hydramatic	FCG	N,D3,D4,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							8½	•	•	•	•
6-5660	Hydramatic	FCG	N,D3,D4,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							11	•	•	•	•
8-5680	Ultramatic	TCG	P,N,D1,D2,L,R	1.82[1]	1.82[1]	1.00[1]	No	1.63[1]	Y	Y	45	4	2.90–1650	Y	24–70	20	WC	No	11	•	•	•	•
Rambler 6-5610	Hydramatic	FCG	N,D3,D4,L,R	3.82	2.63	1.45	1.00	4.30	Y	Y	58	No							8½	•	•	•	•
CHRYSLER CORP.																							
Chrysler 8-C-71	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1630	No			AC	No	10	•	•	•	•
8-C-72	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1635	No			WC	No	11	•	•	•	•
8-C-72-300	Power Flite	TCG							Y	Y		3		No			AC	No		•	•	•	•
De Soto 8-S-23	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1650	No			AC	No	10	•	•	•	•
8-S-24	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.70–1930	No			WC	No	10	•	•	•	•
Dodge 6-D-62	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1330	No			AC	No	10	•	•	•	•
8-D-63-1	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.70–1670	No			AC	No	10	•	•	•	•
8-D-63-2, D-63-3	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1630	No			AC	No	10	•	•	•	•
Imperial 8-C-70, C-73	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1635	No			WC	No	11	•	•	•	•
Plymouth 6-P-28	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.60–1330	No			AC	No	10	•	•	•	•
8-P-29	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.70–1690	No			AC	No	10	•	•	•	•
8-P-29-3 Fury	Power Flite	TCG	N,R,D,L	1.72[1]	1.72[1]	1.00[1]	No	2.39[1]	Y	Y	55	3	2.70–1780	No			AC	No	10	•	•	•	•
FORD MOTOR CO.																							
Continental 8-60-A	Turbodrive	TCG	P,R,N,D,L	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	78	3	2.10–1650	No			AC	No	10	•	•	•	•
Ford 6	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	62	3	2.10–1480	No			AC	No	9⅔	•	•	•	•
8	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	65	3	2.10–1640	No			AC	No	9¾	•	•	•	•
8-40-A, 40-B	Fordomatic	TCG	P,R,N,Dr,Lo	2.40[1]	2.40[1]	1.46[1]	1.00[1]	2.00[1]	Y	Y	65	3	2.10–1710	No			AC	No		•	•	•	•
Lincoln 8-73-A, 73-B	Turbodrive	TCG	P,R,N,Dr,Lo	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	73	3	2.10–1650	No			AC	No	10	•	•	•	•
Mercury 8	Merc-o-matic	TCG	P,R,N,Dr,Lo	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	69	3	2.10–1690[2]	No			AC	No	10½	•	•	•	•
GENERAL MOTORS CORP.																							
Buick 8-40, 50, 60, 70	Dynaflow	TCG	P,N,D,L,R	1.82[1]	1.00[1]	No	No	1.82[1]	Y	No	40	5	3.10–1650[3]	No			WC	No	10½	•	•	•	•
Cadillac 8-60, 62, 75	Hydramatic	FCG	P,N,Dr4,Dr3,Lo,R	3.97	2.55	1.55	1.00	4.31	Y	Y	70[4]	No							11⅓	•	•	•	•
Chevrolet 6, 8-1500, 2100, 2400	Powerglide	TCG	P,N,D,L,R	1.82[1]	1.00[1]	No	No	1.82[1]	Y	Y	50	3	2.10–	No			OC	No	11	•	•	•	•
8-2934	Powerglide	TCG	P,N,D,L,R	1.82[1]	1.82[1]	No	No	1.82[1]	Y	Y	50	3	2.10–	No			No	No	11	•	•	•	•
Oldsmobile 8-88	Hydramatic	FCG	N,Dr,S,Lo,R	3.82	2.63	1.45	1.00	4.30	Y	Y	65	No							11⅓	•	•	•	•
8-Super 88, 98	Hydramatic	FCG	P,N,Dr,S,Lo,R	3.97	2.55	1.55	1.00	4.31	Y	Y	65	No							11	•	•	•	•
Pontiac 8-56-27	Hydramatic[5]	FCG	N,Dr4,Dr3,Lo,R	4.10	2.63	1.56	1.00	4.62	Y	Y	65	No							9½	•	•	•	•
8-56-28	Hydramatic	FCG	P,N,Dr4,Dr3,Lo,R	3.97	2.55	1.55	1.00	4.31	Y	Y	70	No							9⅞	•	•	•	•
STUDEBAKER-PACKARD CORP.																							
Clipper 8-5640, 5660	Ultramatic	TCG	N,L,H,P,R,D	1.82[1]	1.82[1]	1.00[1]	No	1.63[1]	Y	Y	45	4	2.90–1650[6]	Y	24–70	20	WC	No	11	•	•	•	•
Packard 8-5680, 5688	Ultramatic	TCG	N,L,H,P,R,D	1.82[1]	1.82[1]	1.00[1]	No	1.63[1]	Y	Y	45	4	2.90–1650[6]	Y	24–70	20	WC	No	11	•	•	•	•
Studebaker 8-56-B	Flightomatic	TCG	P,N,D,L,R	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	60	3	2.15–1650	No			AC	No	9	•	•	•	•
8-56-G	Flightomatic	TCG	P,N,D,L,R	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	60	3	2.15–1600	No			AC	No	9	•	•	•	•
8-56-H	Flightomatic	TCG	P,N,D,L,R	2.40[1]	2.40[1]	1.47[1]	1.00[1]	2.00[1]	Y	Y	60	3	2.15–1800	No			AC	No	9	•	•	•	•
8-56-J	Ultramatic	TCG	P,N,D1,D2,L,R	1.82[1]	1.82[1]	1.00[1]	No	1.63[1]	Y	Y	45	4	2.90–1650	Y	24–70	20	WC	No	11	•	•	•	•

ABBREVIATIONS

•—Automatic transmission fluid type "A."
1—Plus torque converter ratio.
2—With 8.40 compression ratio only; 2.10-1710 with 9.00 compression ratio.
3—With stator at low angle only; 3.50-2600 on Series 40; 3.50-2700 on Series 50, 60, 70 with stator at high angle.
4—Fourth to third only; third to second, 25.
5—Hydramatic used on 56-28 series is also used on 56-27 series at manufacturer's option.
6—Some models only; other models, 3.25-2000.
AC—Air cooled.
D—Drive range.
Dr—Drive range.
FCG—Fluid coupling with gears.
H—High range.
L—Low range.
Lo—Low range.
N—Neutral.
No—No or none.
OC—Plate type oil cooler.
P—Park.
R—Reverse.
S—Super performance range.
TCG—Torque converter with gears.
WC—Water cooled.
Y—Yes.

For Directory of Car Manufacturers listed above, see page 286

PROPELLER SHAFT, AND REAR AXLE

PASSENGER CAR MAKE AND MODEL	PROPELLER SHAFT										REAR AXLE														
			Intermediate Bearing		Universals								Gearing								Lubricant				
								Bearing					Ratios			No. of Teeth—Ring and Pinion							SAE Viscosity Number		
	Number Used	Type	Type	Lubrication	Make	Number Used	Type	Type	Lubrication	Drive Taken Through	Torque Taken Through	Type	Gear Type	Conventional (to — 1)	Overdrive (to — 1)	Automatic (to — 1)	Conventional	Overdrive	Automatic	Pinion Adjustment	Pinion Bearing Adjustment	Capacity (Pt.)	Type Recommended	Summer	Winter	Extreme Cold
AMERICAN MOTORS CORP.																									
Hudson 6-35640	1	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	4.10	4.40	3.60	37-9	40-9[1]	43-12	Sh	Sh	3	Hy	90	80	80
6-35660	1	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	4.10[3]	4.40[4]	3.15	41-10[3]	40-9[4]	41-13	Sh	Sh	4	Hy	90	80	80
8-35680	2[2]	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	N	N	3.15	N	N	41-13	Sh	Sh	4	Hy	90	80	80
Metropolitan 4-561, 562	1	Ex				2				RS	RS		Hy	4.30	N	N		N	N							
Nash 6-5640	1	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	4.40[5]	4.90[6]	3.60	40-9[5]	39-8[6]	43-12	Sh	Sh	3	Hy	90	80	80
6-5660	1	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	4.10	4.40[4]	3.15	41-10	40-9[4]	41-13	Sh	Sh	4	Hy	90	80	80
8-5680	2[2]	TT	AF	P	Mec,Sag	1	Cr	AF	P	TT	TT	SF	Hy	N	N	3.15	N	N	41-13	Sh	Sh	4	Hy	90	80	80
Rambler 6-5610	1	TT	AF[7]	P[7]	Mec	1	Cr	AF	P	TT	TT	SF	Hy	3.77[8]	4.40[5]	3.58[9]	34-9[8]	40-9[5]	43-12[9]	Sh	Sh	3	Hy	90	80	80
CHRYSLER CORP.																									
Chrysler 8-C-71	1	Ex	N		UP	2	BT[10]	AF	P	RS	RS	SF	Hy	3.73	N	3.54	41-11	N	39-11	SS	Sh	3½	MP	90	90	80
8-C-72	1	Ex	N		UP	2	BT[10]	AF	P	RS	RS	SF	Hy	N	N	3.36	N	N	37-11	SS	SS	3½	MP	90	90	80
8-C-72-300	1	Ex	N		UP	2	BT[10]	AF	P	RS	RS	SF	Hy	[11]	N	[11]	[11]	N	[11]	SS	SS	3½	MP	90	90	80
De Soto 8-S-23	1	Ex	N		UP	2	BT[10]	AF	P	RS	RS	SF	Hy	3.90	4.30	3.73	39-10	43-10	41-11	SS	Sh	3¼	MP	90	90	80
8-S-24	1	Ex	N		UP	2	BT[10]	AF	P	RS	RS	SF	Hy	N	N	3.54	N	N	39-11	SS	SS	3½	MP	90	90	80
Dodge 8-D-62	1	Ex	N		UP	2	BT	AF	P[12]	RS	RS	SF	Hy	3.90	4.30	3.73	39-10	43-10	41-11	SS	Sh	3¼	MP	90	90	80
8-D-63-1	1	Ex	N		UP	2	BT	AF	P[12]	RS	RS	SF	Hy	3.73	4.10	3.54	41-11	41-10	39-11	SS	Sh	3¼	MP	90	90	80
8-D-63-2, D-63-3	1	Ex	N		UP	2	BT[10]	AF	P[12]	RS	RS	SF	Hy	3.73	4.10	3.54	41-11	41-10	39-11	SS	Sh	3¼	MP	90	90	80
Imperial 8-C-70	2	Ex	AF	P	UP	3	Cr	AF	P	RS	RS	SF	Hy	N	N	3.54	N	N	39-11	SS	SS	5	MP	90	90	80
8-C-73	2	Ex	AF	P	UP	3	Cr	AF	P	RS	RS	SF	Hy	N	N	3.54	N	N	39-11	SS	SS	3½	MP	90	90	80
Plymouth 6-P-28	1	Ex	N		Ply	2	BT	AF	P	RS	RS	SF	Hy	3.73[31]	4.10[32]	3.73[32]	41-11	41-10	41-11	SS	Sh	3¼	MP	90	90	90
8-P-29	1	Ex	N		Ply	2	BT	AF	P	RS	RS	SF	Hy	3.73[31]	4.10[32]	3.54[33]	41-11	41-10	39-11	SS	Sh	3¼	MP	90	90	90
8-P-29-3 Fury	1	Ex	N		Ply	2	BT[10]	AF	P	RS	RS	SF	Hy	3.73[31]	4.10[32]	3.73[34]	41-11	41-10	41-11	SS	Sh	3¼	MP	90	90	90
FORD MOTOR CO.																									
Continental 8-60-A	2	Ex	Ba	P	Spi	3	Cr[17]	NR	PF	RS	RS	SF	Hy	N	N	3.07	N	N		Sh	Sh	4	EP	90	90	80
Ford 6	1	Ex	N		Mec	2	Cr[16]	NR	P	RS	RS	SF	Hy	3.89[13]	4.11[14]	3.22[15]				Sh	CS	3½	EP	90	90	80
8	1	Ex	N		Mec	2	Cr[16]	NR	P	RS	RS	SF	Hy	3.78[14]	3.89[18]	3.22[15]				Sh	CS	3½	EP	90	90	80
8-40-A, 40-B	1	Ex	N		Mec	2	Cr[16]	NR	PF	RS	RS	SF	Hy	5.73	3.92	3.31				Sh	Sh	3	HM	90	90	80
Lincoln 8-73-A, 73-B	1	Ex	N		Spi	2	SJ[19]	NR	PF	RS	RS	SF	N	N	N	3.07[20]	N	N	43-14[20]	Sh	Sh	4	ME	80-90	80-90	80-90
Mercury 8	1	Ex	N		Spi	2	Cr	NR	PF	RS	RS	SF	Hy	3.73[21]	4.09[22]	3.15[23]				Sh	Sh	3½	HM	90	90	80
GENERAL MOTORS CORP.																									
Buick 8-40	1	TT	N		Sag	1	Cr	PI	LT	TT	TT	SF	Hy	3.90	N	3.20	43-11	N	42-13	Sh	Sh	6		90	90	80
8-50, 60, 70	1	TT	N		Sag	1	Cr	PI	LT	TT	TT	SF	Hy	N	N	3.36	N	N	47-14	Sh	Sh	6		90	90	80
Cadillac 8-60, 62	1	Ex	N		Mec,Sag	2	CT	NR	P	RS	RS	SF	Hy	N	N	3.07[24]	N	N		N	CS	5	Hy	90	90	80
8-75	2	Ex	AF	P	Mec	3	CT	NR	P	RS	RS	SF	Hy	N	N	3.36	N	N		N	CS	5	Hy	90	90	80
Chevrolet 6, 8-1500, 2100, 2400	1	Ex	N		Chev	2	YS	AF	P	RS	RS	SF	Hy	3.70	4.11	3.55	37-10	37-9	39-11	Sh	N	4	Hy	90	90	90
8-2934	1	Ex	N		Chev	2	YS	AF	PF	RS	RS	SF	Hy	3.27	N	3.55	38-11	N	39-11	Sh	N	4	Hy	90	90	80
Oldsmobile 8-88	1	Ex	N		Sag	2	Cr	NR	P	RS	RS	SF	Hy	3.64	N	3.23	40-11	N	42-13	Sh	Nu	5	MP	90	90	80
8-98	1	Ex	N		Sag	2	Cr	NR	P	RS	RS	SF	Hy	N	N	3.42	N	N	41-12	Sh	Nu	5	MP	90	90	80
Pontiac 8-56-27	1	Ex	N		Sag	2	Cr	AF	P	RS	RS	SF	Hy	3.64	N	3.08	40-11	N	40-13	Sh	CS	3½	Hy	90	90	90
8-56-28	1	Ex	N		Sag	2	Cr	AF	P	RS	RS	SF	Hy	3.64	N	3.23	40-11	N	42-13	Sh	CS	3½	Hy	90	90	90
STUDEBAKER-PACKARD CORP.																									
Clipper 8-5640, 5660	1	Ex	N		Spi[25]	2	CY[26]	AF	PF[27]	TA	TA	SF	Hy	3.54[4]	3.54[4]	3.07[28]	39-11[4]	39-11[4]	43-14	N	Sh	4½	MP	90	90	80
Packard 8-5680, 5688	1	Ex	N		Spi[25]	2	CY[26]	AF	PF[27]	TA	TA	SF	Hy	3.54[4]	3.54[4]	3.54[29]	39-11[4]	39-11[4]	46-13	N	Sh	4½	MP	90	90	80
Studebaker 8-56-B	2	Ex	AF	P	Spi	3	Cr	NR	PF	RS	RS	SF	Hy	3.54	3.92	3.31				Sh	Sh	3	Hy	90	90	90
6-56-G	2	Ex	AF	P	Spi	3	Cr	NR	PF	RS	RS	SF	Hy	4.10	4.56	3.54				Sh	Sh	2½	Hy	90	90	90
8-56-H	2	Ex	AF	P	Spi	3	Cr	NR	PF	RS	RS	SF	Hy	3.54	3.92[30]	3.31				Sh	Sh	3	Hy	90	90	90
8-56-J	2	Ex	AF	P	Spi	3	Cr	NR	PF	RS	RS	SF	Hy	N	3.92	3.07	N			Sh	Sh	3	Hy	90	90	90

ABBREVIATIONS

1—Or 35-8.
2—Single case, two-piece unit.
3—4.40 (40-9) optional.
4—4.10 (41-10) optional.
5—Or 35-8; 4.10 (37-9) optional.
6—4.40 (35-8) optional.
7—None with auto. trans.
8—4.40 (40-9 or 35-8) optional.
9—5615 Deluxe 4 dr. Sedan, 3.07 (43-14) standard; 3.31 (43-13), 3.58 (43-12) optional.
10—Front only; rear, cross.
11—Optional ratios available; 3.08 (40-13), 3.36 (37-11), 3.54 (39-11), 3.73 (41-11), 3.91 (43-11), 3.90 (39-10), 4.00 (40-10), 4.10 (41-10), 4.30 (43-10), 4.56 (41-9), 4.89 (44-9), 5.38 (43-8), 5.83 (35-6), 6.17 (37-6).
12—Cross only; ball and trunnion, clean and repack.
13—4.11 optional. 14—3.89 optional.
15—3.56 optional.
16—Front only; rear, split joint and companion flange.
17—Front and rear only; intermediate, slip joint.
18—3.78 optional.
19—Front only; rear, flanged U-bolt.
20—3.31 (43-13) with air conditioning.
21—4.09 optional.
22—3.73 optional.
23—3.54 optional.
24—3.36 optional except on Eldorado and all Eldorado engines equipped cars.
25—Universal Products with auto. trans.
26—Front, ball and trunnion; rear, cross and yoke with auto. trans.
27—Spicer only; Universal Products, prepacked.
28—2.87, 3.31, 3.54, 4.10 optional.
29—2.87, 3.07, 3.31, 4.10 optional.
30—Classic, 4.09.
31—Optional ratios available; 3.54, 3.90, 4.10, 4.30.
32—Optional ratios available; 3.90, 4.30.
33—Optional ratios available; 3.73, 3.90, 4.10.
34—Optional ratios available; 3.54, 3.90.

Ba—Ball bearing.
BT—Ball and trunnion.
Chev—Chevrolet Div.
Cr—Cross. **CS**—Collapsible spacer.
CT—Cross and trunnion.
CY—Cross and yoke.
EP—Extreme pressure hypoid gear lubricant.
Ex—Exposed.
HM—Hypoid or multi-purpose extreme pressure gear lubricant.
Hy—Hypoid.
LT—Lubricated from transmission.
ME—Multi-purpose special extreme pressure gear lubricant.
Mec—Mechanics Universal Joint Div.
MP—Multi-purpose hypoid gear lubricant.
N—No or none.
NR—Needle roller bearings. **Nu**—Nut.
P—Prepacked. **PF**—Pressure fitting.
PI—Plain. **Ply**—Plymouth Div.
RS—Rear springs.
Sag—Saginaw Steering Gear Div.
SF—Semi-floating. **Sh**—Shims.
SJ—Slip joint.
Spi—Spicer Mfg. Div. **SS**—Solid shim.
TA—Torque arms. **TT**—Torque tube.
UP—Universal Products Corp.
YS—Yoke and spider (trunnion).

TIRES AND BRAKES

PASSENGER CAR MAKE AND MODEL	TIRES		SERVICE BRAKES																						PARKING BRAKES		
							Drum			Brake Lining										Wheel Cylinder Bore								
								Diameter			Primary				Secondary													
	Rev./Mile at 30 mph	Tire Size	Type	Booster Type	Effective Area (sq. in.)	Percent Effectiveness—Rear	Type and Material	Front	Rear	Bonded or Riveted	Material	Size (length-width-thickness) Front Wheel	Size (length-width-thickness) Rear Wheel	Segments per Shoe	Material	Size (length-width-thickness) Front Wheel	Size (length-width-thickness) Rear Wheel	Segments per Shoe	Front	Rear	Master Cylinder Bore	Available Pedal Travel	Line Pressure at 100 lb. Pedal Load	Shoe Clearance Adjustment	Type of Control	Location of Control	Operates on
AMERICAN MOTORS CORP.																											
Hudson 6-35640	748.0	6.70/15	H	Vac	158.9	43	CIA	10	10	R	Mo	8 x 2 x	8 x 1 3/4 x 3/32	1	Mo	11 x 2 1/2 x 7/32	10 x 1 3/4 x 7/32	1	1 1/16	7/8	1	6	669	.015	HL	UL	RB
6-35660	737.0	7.10/15	H	Vac	197.9	43	CIA	11	11	R	Mo	10 x 2 1/2 x 3/32	9 x 2 x 3/32	1	Mo	11 x 2 1/2 x 3/32	11 x 2 x 3/32	1	1 1/16	7/8	1	6	669	.015	HL	UL	RB
8-35680	726.0	7.60/15	H	Vac	197.9	43	CIA	11	11	R	Mo	10 x 2 1/2 x 3/32	9 x 2 x 3/32	1	Mo	11 x 2 1/2 x 3/32	11 x 2 x 3/32	1	1 1/16	7/8	1	6	669	.015	HL	UL	RB
Metropolitan 4-561, 562		5.20/13	H		76.8			8	8	B															HL	LF	RB
Nash 6-5640	748.0	6.70/15	H	Vac	158.9	43	CIA	10	10	R	Mo	8 x 2 x 3/32	8 x 1 3/4 x 3/32	1	Mo	11 x 2 1/2 x 3/32	10 x 1 3/4 x 3/32	1	1 1/16	7/8	1	6	650	.015	HL	UL	RB
6-5660	737.0	7.10/15	H	Vac	197.9	43	CIA	11	11	R	Mo	10 x 2 1/2 x 3/32	9 x 2 x 3/32	1	Mo	11 x 2 1/2 x 3/32	11 x 2 x 3/32	1	1 1/16	7/8	1	6	669	.015	HL	UL	RB
8-5680	726.0	7.60/15	H	Vac	197.9	43	CIA	11	11	R	Mo	10 x 2 1/2 x 3/32	9 x 2 x 3/32	1	Mo	11 x 2 1/2 x 3/32	11 x 2 x 3/32	1	1 1/16	7/8	1	6	669	.015	HL	UL	RB
Rambler 6-5610	765.0	6.40/15	H	Vac	149.6	35	CIA	9	9	R	Mo	9 x 2 1/2 x 3/32	9 x 2 x 3/32	1	Mo	7 x 1 1/4 x 3/32	7 x 1 3/4 x 3/32	1	1 1/16	7/8	1	6 1/2	862	F	HL	UL	RB
CHRYSLER CORP.																											
Chrysler 8-C-71	728.0	7.60/15	H	Vac	251.0	40	Ce	12	12	B	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[1]	NM	TH	UL	RT
8-C-72, C-72-300	715.0	8.00/15	H	Vac	251.0	40	Ce	12	12	B	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	1 1/16	1 1/16	1 1/16	4 5/16	1100	NM	TH	UL	RT
De Soto 8-S-23, S-24	728.0	7.60/15	H	Vac	251.0	40	Co	12	12	B	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[1]	NM	TH	UL	RT
Dodge 6-D-62	750.0	6.70/15	H	Vac	173.5	40	Co	11	11	B	MA	11 1/2 x 2 x 1/4	11 1/2 x 2 x 1/4	1	MA	11 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[2]	.006	TH	UL	TD
8-D-62-1, D-62-2	739.0	7.10/15	H	Vac	173.5	40	Co	11	11	B	MA	11 1/2 x 2 x 1/4	11 1/2 x 2 x 1/4	1	MA	11 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[2]	.006	TH	UL	TD
8-D-63-3	728.0	7.60/15	H	Vac	173.5	40	Co	11	11	B	MA	11 1/2 x 2 x 1/4	11 1/2 x 2 x 1/4	1	MA	11 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[2]	.006	TH	UL	TD
Imperial 8-C-70	698.0	8.20/15	H	Vac	251.0	40	Ce	12	12	B	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	1 1/16	1 1/16	1 1/16	4 5/16	1100	NM	TH	UL	RT
8-C-73	702.0	8.20/15	H	Vac	251.0	40	Ce	12	12	B	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	MA	12 x 2 1/2 x 1/4	12 x 2 1/2 x 1/4	1	1 1/16	1 1/16	1 1/16	4 5/8	1100	NM	TH	UL	RT
Plymouth 6-P-28	750.0	6.70/15	H	Vac	158.0	40	Ce	10	10	B	MA	10 1/2 x 2 x 1/4	10 1/2 x 2 x 1/4	1	MA	10 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[2]	.006	TH	UL	TD
8-P-29	748.0	6.70/15	H	Vac	166.0	38	Co[3]	11	10	B	MA	11 1/2 x 2 x 1/4	10 1/2 x 2 x 1/4	1	MA	11 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	750[2]	.006	TH	UL	TD
8-P-29-3 Fury	739.0	7.10/15	H	Vac	173.5	40	Co[3]	11	11	B	MA	11 1/2 x 2 x 1/4	11 1/2 x 2 x 1/4	1	MA	11 1/2 x 2 x 1/4	8 x 2 x 1/4	1	1 1/16	1 1/16	1 1/16	7	770[4]	.006	TH	UL	TD
FORD MOTOR CO.																											
Continental 8-60-A	711.0	8.00/15[5]	H		207.7	42	Co	12	12	R	MA	10 x 2 1/2 x 3/32	10 x 2 x 3/32	1	MA	12 x 2 1/2 x 3/32	12 x 2 x 3/32	1	1	1	1	4 1/16	1110	.010	CH	UL	RB
Ford 6, 8	753.0	6.70/15	H	Vac	180.2	38	Co	11	11	R	MA	10 x 2 1/4 x 1/4	10 x 1 3/4 x 1/4	1	MA	11 x 2 1/4 x 1/4	11 x 1 3/4 x 1/4	1	1 1/16	7/8	1	6 1/2	700	.010	TH	UL	RB
8-40-A, 40-B	753.0	6.70/15	H	N	169.7	38	Co	11	11	R	MA	10 x 1 3/4 x 1/4	10 x 1 3/4 x 1/4	1	MA	11 x 2 1/4 x 1/4	11 x 1 3/4 x 1/4	1	1 1/16	7/8	1	6 1/2	700	.010	TH	UL	RB
Lincoln 8-73-A, 73-B	711.0	8.00/15[5]	H		257.5	42	Co	12	12	R	MA	10 x 2 1/2 x 3/32	10 x 2 x 3/32	1	MA	12 x 2 1/2 x 3/32	12 x 2 x 3/32	1	1 1/16	7/8	1	6 1/2[6]	650	.010	TH	UL	RB
Mercury 8	736.0	7.10/15	H		190.9	38	Co	11	11	R	MA	9 x 2 1/2 x 1/4	9 x 2 x 1/4	1	MA	11 x 2 1/2 x 1/4	11 x 2 x 1/4	1	1 1/16	7/8	1	6 1/2	740	.010	TH	UL	RB
GENERAL MOTORS CORP.																											
Buick 8-40	750.0	7.10/15	H		173.0	47	CI	12	12	R	Mo	10 3/4 x 2 1/4 x 1/4	10 3/4 x 2 1/4 x 1/4	1	Mo	12 1/4 x 2 1/4 x 1/4	12 1/4 x 2 1/4 x 1/4	1	1 1/16	1	1 1/16	6	500	.015	SO	LC	RB
8-50, 60	735.0	7.60/15	H		173.0	47	CI	12	12	R	Mo	10 3/4 x 2 1/4 x 1/4	10 3/4 x 2 1/4 x 1/4	1	Mo	12 1/4 x 2 1/4 x 1/4	12 1/4 x 2 1/4 x 1/4	1	1 1/16	1	1 1/16	6	500	.015	SO	LC	RB
8-70	723.0	8.00/15	H		184.5	47	CI	12	12	R	Mo	10 3/4 x 2 1/4 x 1/4	10 3/4 x 2 1/4 x 1/4	1	Mo	12 1/4 x 2 1/4 x 1/4	12 1/4 x 2 1/4 x 1/4	1	1 1/16	1	1 1/16	6	500	.015	SO	LC	RB
Cadillac 8-60, 62	720.0[7]	8.00/15	H		222.0	44	CI	12	12	R	MA	11 1/4 x 2 1/2 x 1/4	11 1/4 x 2 1/2 x 1/4	1	MA	12 1/4 x 2 1/2 x 1/4	12 1/4 x 2 1/2 x 1/4	1	1 1/16	1	1 1/16	4 1/16	930	.010[9]	TH	UL	RB
8-75	712.0[8]	8.20/15	H		233.6	44	CI	12	12	R	MA	12 1/4 x 2 1/2 x 1/4	12 1/4 x 2 1/2 x 1/4	1	MA	12 1/4 x 2 1/2 x 1/4	12 1/4 x 2 1/2 x 1/4	1	1 1/16	1	1 1/16	4 1/2	930	.010[9]	TH	UL	RB
Chevrolet 6, 8-1500, 2100, 2400	755.0	6.70/15	H	Vac	158.0	44	Co	11	11	B	MA	9 x 2 x 1/4	9 x 1 3/4 x 3/32	1	MA	11 x 2 x 1/4	11 x 1 3/4 x 3/32	1	1 1/16	1	1	6 3/16	800	ALD	TH	UL	RB
8-2934	754.0	6.70/15	H	N	158.0	44	Co	11	11	B	MA	9 x 2 x 1/4	9 x 1 3/4 x 3/32	1	MA	11 x 2 x 1/4	11 x 1 3/4 x 3/32	1	1 1/16	1	1	4 1/2	700	ALD	TH	UL	RB
Oldsmobile 8-88	740.2	7.10/15			191.7	44	Ce	11	11	R		9[10] x 2 1/2 x 1/4	9 x 2 1/2 x 1/4	1		12 1/2 x 2 1/2 x 1/4	12 1/2 x 2 x 1/4	1	1 1/16	7/8	1	6 1/2	735	.015	FP	LS	RB
8-Super 88, 98	721.3	7.60/15			191.7	44	Ce	11	11	R		9[10] x 2 1/2 x 1/4	9[10] x 2 x 1/4	1		12 1/2 x 2 1/2 x 1/4	12 1/2 x 2 x 1/4	1	1 1/16	7/8	1	6 1/2	735	.015	FP	LS	RB
Pontiac 8-56-27, 56-28	734.0	7.10/15	H	Vac	178.0	44	CIA	12	11	R	MA	10 1/4 x 2 1/4 x 1/4	9 1/4 x 1 3/4 x 1/4	1	MA	12 1/4 x 2 1/4 x 1/4	11 1/4 x 1 3/4 x 1/4	1	1 1/16	1 1/16	1	5 1/16	760	.015	TH	LS	RB
STUDEBAKER-PACKARD CORP.																											
Clipper 8-5640, 5660	731.0	7.60/15	H		191.8	40	CI	11	11	R		9 x 2 1/2 x 3/8	9 x 2 x 1/4	1		12 x 2 1/2 x 3/8	12 x 2 x 1/4	1	1 1/16	1 1/16	1	6 3/4	710	.010	TH	LS	RB
Packard 8-5680, 5688	717.0	8.00/15	H		208.3	40	CI	12	12	R		11 1/4 x 2 1/4 x 1/4	11 1/4 x 2 x 1/4	1		13 x 2 1/4 x 1/4	13 x 2 x 1/4	1	1 1/16	1	1	6 3/4	710	.010	TH	LS	RB
Studebaker 8-56-B	753.0	6.70/15	H		195.3	38	Co	11	10	R		12 x 2 1/4 x 1/4	10 x 2 x 1/4	1		12 x 2 1/4 x 1/4	10 x 2 x 1/4	1	1 1/16	7/8	1	6	890	.007	HL	RS	RB
6-56-G	(10)	6.40/15[11]	H		166.0	38	Co	10	9	R		10 x 2 x 1/4	9 x 2 x 1/4	1		10 x 2 x 1/4	9 x 2 x 1/4	1	1	7/8	1	6	890	.007	HL	RS	RB
8-56-H	(12)	6.70/15[13]	H		195.3	38	Co	11	10	R		12 x 2 1/4 x 1/4	10 x 2 x 1/4	1		12 x 2 1/4 x 1/4	10 x 2 x 1/4	1	1 1/16	7/8	1	6	890	.007	HL	RS	RB
8-56-J	739.0	7.10/15	H		195.3	38	Co	11	10	R		12 x 2 1/4 x 1/4	10 x 2 x 1/4	1		12 x 2 1/4 x 3/32	10 x 2 x 1/4	1	1 1/16	7/8	1	6	890	.007	HL	RS	RB

ABBREVIATIONS

1—1100 with power brakes.
2—1200 with power brakes.
3—Front only; rear, centrifuse.
4—1150 with power brakes.
5—8.20/15 with air conditioning.
6—4 1/4 with power brakes.
7—U. S. Royal only; Goodrich, 717.0; Firestone, 711.0.
8—U. S. Royal only; Goodrich and Firestone, 706.0.
9—Top only; bottom, .015.
10—Station wagon, 753.0; all other models, 771.0.
11—Station wagon, 6.70/15.
12—Classic, 739.0; all other models, 753.0.
13—Classic, 7.10/15.
ALD—Adjust to light drag and back off seven notches.
B—Bonded.
Ce—Centrifuse.
CH—Cane handle, twist release.
CI—Cast iron.
CIA—Cast iron alloy.
Co—Composite.
F—Floating, eccentric adjustment.
FP—Foot pedal control.
H—Hydraulic, internal expanding.
HL—Hand lever.
LC—Left side cowl panel.
LF—Left side of floor board.
LS—Left of steering column.
MA—Moulded asbestos.
Mo—Moulded.
N—No or none.
NM—No major adjustment required.
R—Riveted.
RB—Rear service brakes.
RS—Right of steering column.
RT—Rear of transmission.
SO—Step on, left foot operated.
TD—Transmission drive shaft.
TH—"T" handle, multiple pawl ratchet.
UL—Under instrument panel, left of steering column.
Vac—Vacuum.

For Directory of Car Manufacturers listed above, see page 286

FRONT SUSPENSION AND STEERING

PASSENGER CAR MAKE AND MODEL	FRONT SUSPENSION											STEERING																		
		Spring						Shock Absorbers						Turning Diameter			Mechanical				Power						Linkage			
																	Gear						Gear							
																			Ratios (to–1)				Ratios (to–1)						
	Type	Type	Free Length	I. D. of Coil	Spring Rate (lb. per in.)	Rate at Wheel (lb. per in.)	Normal Load (lb. @ rated length)	Make	Type	Piston Diam. (in.)	Stabilizer—Type	Type	Wheel Diameter	Wall to Wall (outside front)	Curb to Curb (outside front)	Inside Wheel Angle with Outside Wheel at 20 (deg.)	Type	Make	Gear	Over-all	Type	Make	Type	Gear	Over-all	Pump Driven by	Type	Location	Drag Link	Tie Rods
AMERICAN MOTORS CORP.																														
Hudson 6-35640	ICS	Co	.....	$5\frac{1}{2}$	100	94	920–$8\frac{1}{2}$	Mon	D	1	N	Mec[1]	18	41'10"	39'3"	24	WR	Gem	20.0	26.0	Lk	Mon	WR	18.2	23.9	B	BS	R	Tr	...
6-35660	ICS	Co	.....	$5\frac{1}{2}$	115	108	1000–$8\frac{1}{2}$	Mon	D	1	LI	Mec[1]	18	45'2"	42'8"	26	WR	Gem	20.0	26.3	Lk	Mon	WR	18.2	23.2	B	BS	R	Tr	...
8-35680	ICS	Co	.....	$5\frac{1}{2}$	123	115	1200–$8\frac{1}{2}$	Mon	D	1	LI	Mec[1]	18	45'2"	42'8"	26	WR	Gem	20.0	26.3	Lk	Mon	WR	18.2	22.2	B	BS	R	Tr	...
Metropolitan 4-561, 562	ICS	Co	.....	.....	.....	.....	.....	Gir	D	...	...	Mec	17	36'0"	.....	.....	CL	.....	13.5	21.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nash 6-5640	ICS	Co	.....	$5\frac{1}{2}$	100	94	920–$8\frac{1}{2}$	Mon	D	1	N	Mec[1]	18	45'5"	42'9	23	WR	Gem	20.0	23.4	Lk	Mon	WR	18.2	20.8	B	BS	R	Tr	...
6-5660	ICS	Co	.....	$5\frac{1}{2}$	115	108	1000–$8\frac{1}{2}$	Mon	D	1	LI	Mec[1]	18	47'0"	44'4"	25	WR	Gem	20.0	26.3	Lk	Ben	WR	18.2	23.2	B	BS	R	Tr	...
8-5680	ICS	Co	.....	$5\frac{1}{2}$	123	115	1200–$8\frac{1}{2}$	Mon	D	1	LI	Mec[1]	18	47'0"	44'4"	25	WR	Gem	20.0	26.3	Lk	Mon	WR	18.2	22.2	B	BS	R	Tr	...
Rambler 6-5610	ICS	Co	.....	5	96[2]	83[3]	895–$8\frac{3}{4}$[4]	Del	D	1	N	Mec[1]	17	40'1"L	37'6"L	$22\frac{1}{2}$	WR	Gem	20.0	23.0	Lk	Mon	WR	20.0	16.2	B	B	F	Tr	2
CHRYSLER CORP.																														
Chrysler 8-C-71	ICS	Co	.....	4	480	.....	2380–11L	Chr	D	1	LI	Mec[1]	18	46'6"	43'9"	.....	WTR	Gem	20.4	30.9	In	Chr	RGR	16.2	20.3	G	SE	R	Tr	2
8-C-72	ICS	Co	.....	4	480	.....	2475–11L	Chr	D	1	LI	Mec[1]	18	46'6"	43'9"	.....	WTR	Gem	20.4	30.9	In	Chr	RGR	16.2	20.3	G	SE	R	Tr	2
8-C-72-300	ICS	Co	.....	4	800	.....	2000-11L	Chr	D	1	LI	Mec[1]	18	46'6"	43'9"	.....	WTR	Gem	20.4[5]	30.9[6]	In	Chr	RGR	16.2	20.3	G	SE	R	Tr	2
De Soto 8-S-23, S-24	ICS	Co	.....	4	480	.....	2285–11L	De	D	1	LI	Mec[1]	18	46'4"	43'9"	.....	WTR	Gem	20.4	30.9	In	De	RGR	16.2	20.3	G	SE	R	Tr	2
Dodge 6-D-62	ICS	Co	.....	4	415	.....	1475–11L	Do	D	1	LI	Mec[1]	18	43'0"	42'10"	.....	WTR	Do	18.2	22.5	In	Do	RGR	16.2	19.1	G	DLS	R	N	
8-D-63	ICS	Co	.....	4	445	.....	1660–11L	Do	D	1	LI	Mec[1]	18	43'0"	42'3"	.....	WTR	Do	18.2	27.1	In	Do	RGR	16.2	20.1	G	SE	R	Tr	2
Imperial 8-C-70	ICS	Co	.....	4	515	.....	3265–11L	Chr	D	1	LI	Pow	18	52'8"	51'11"	.....	N	.....	.....	.....	In	Chr	RGR	16.2	20.3	G	SE	R	Tr	2
8-C-73	ICS	Co	.....	4	600	.....	2855–11L	Chr	D	1	LI	Pow	18	47'4"	45'2"	.....	N	.....	.....	.....	In	Chr	RGR	16.2	20.3	G	SE	R	Tr	2
Plymouth 6-P-28	ICS	Co	.....	4	385	.....	1415–11L	Ply	D	1	LI	Mec[1]	$17\frac{1}{2}$	42'2"	41'1"	.....	WTR	Ply	18.2	22.5	In	Ply	RGR	16.3	19.1	G	DLS	R	N	2
6-P-29	ICS	Co	.....	4	415	.....	1625–11L	Ply	D	1	LI	Mec[1]	$17\frac{1}{2}$	42'2"	40'6"	.....	WTR	Ply	18.2	27.1	In	Ply	RGR	16.3	20.1	G	SE	R	Tr	2
8-P-29-3 Fury	ICS	Co	.....	4	600	.....	1330–11	Ply	D	1	LI	Mec[1]	$17\frac{1}{2}$	42'2"	40'6"	.....	WTR	Ply	18.2	27.1	In	Ply	RGR	16.3	20.1	G	SE	R	Tr	2
FORD MOTOR CO.																														
Continental 8-60A	IBJ	Co	$15\frac{7}{8}$	$4\frac{1}{4}$	450	126	2690–$9\frac{7}{8}$	Gab	D	$1\frac{5}{8}$	LI	Pow	17	47'8"	45'4"	$25\frac{5}{8}$	N	.....	.....	.....	In	Sag	RBN	17.5	20.9	B	Par	R	Tr	2
Ford 6	IBJ	Co	$15\frac{1}{4}$	$4\frac{1}{4}$	360	.....	2000–$9\frac{1}{2}$	HGM	D	1	LI	Mec[1]	18	.....	41'2"	$24\frac{1}{2}$	WTT	Fo	20.1	25.3	Lk	Ben	WTT	20.1	25.3	B	Par	R	Tr	2
8	IBJ	Co	$15\frac{11}{16}$	$4\frac{1}{4}$	360	.....	2075–$9\frac{1}{2}$	HGM	D	1	LI	Mec[1]	18	.....	41'2"	$24\frac{1}{2}$	WTT	Fo	20.1	25.3	Lk	Ben	WTT	20.1	25.3	B	Par	R	Tr	2
8-40A, 40B	IBJ	Co	15	$4\frac{1}{4}$	290	.....	1540	Gab	D	1	LI	Mec[1]	17	.....	38'6"	25	WTT	Fo	20.1	20.1	Lk	Ben	WTT	20.1	20.1	B	Par	R	Tr	2
Lincoln 6-73A, 73B	IBJ	Co	$16\frac{1}{2}$	$4\frac{1}{4}$	360	100	2450–10	Hou	D	$1\frac{1}{2}$	LI	Pow	18	49'2"	45'6"	$24\frac{1}{2}$	N	.....	.....	.....	.....	Sag	RB	17.5	20.9	B	Par	R	Tr	2
Mercury 8	IBJ	Co	$15\frac{11}{16}$	$4\frac{1}{4}$	360	105	2150–$9\frac{5}{8}$	F-G	D	$1\frac{7}{8}$	LI	Mec[1]	18	45'11"	43'2"	$24\frac{1}{2}$	WTN	Fo	20.1	25.4	Lk	Ben	.....	20.1	25.4	B	Par	R	Tr	2
GENERAL MOTORS CORP.																														
Buick 8-40, 60	ICS	Co	15	$4\frac{3}{4}$	350	92	2200–$9\frac{1}{2}$	Del	D	1	LI	Mec[1]	18	44'0"	41'7"	$22\frac{1}{2}$	BBW	Sag	25.8	29.2	.....	Sag	BBW	17.5	19.8	B	PDL	R	Tr	2
8-50, 70	ICS	Co	15	$4\frac{3}{4}$	360	95	2200–$9\frac{1}{2}$	Del	D	1	LI	Pow	18	48'6"	43'0"	$22\frac{1}{2}$	N	.....	.....	.....	.....	Sag	BBW	17.5	19.8	B	PDL	R	Tr	2
Cadillac 8-60	ICS	Co	$16\frac{5}{8}$	4	350	.....	2210–$10\frac{1}{2}$	Del	D	1	LI	Pow	18	47'5"	45'0"	$22\frac{1}{2}$	N	.....	.....	.....	.....	Sag	BNS	17.5	19.5	B	PDL	R	Tr	2
8-62	ICS	Co	$16\frac{5}{8}$[8]	4	350	.....	2165–$10\frac{1}{2}$	Del	D	1	LI	Pow	18	45'10"	43'5"	$22\frac{1}{2}$	N	.....	.....	.....	.....	Sag	BNS	17.5	19.5	B	PDL	R	Tr	2
8-75	ICS	Co	$16\frac{7}{8}$	4	400	.....	2445–$10\frac{1}{2}$	Del	D	1	LI	Pow	18	54'1"	51'8"	$22\frac{1}{2}$	N	.....	.....	.....	.....	Sag	BNS	17.5	19.5	B	PDL	R	Tr	2
Chevrolet 6, 8-1500, 2100, 2400	IBJ	Co	$15\frac{1}{16}$[9]	$3\frac{27}{32}$	285	100	1630[10]	Del	D	1	N	Mec[1]	18	44'6"	41'8"	24	SRR	Sag	20.0	25.7	.....	Sag	SRR	20.0	23.3	G	RL	R	Lg	2
8-2934	ICS	Co	$13\frac{21}{32}$	$3\frac{3}{4}$	300	110	1145–$9\frac{5}{8}$	Del	D	1	LI	Mec	$17\frac{1}{8}$	39'0"L	36'11"L	23	SRH	Sag	16.0	16.0	N	.....	.....	.....	.....	.....	CP	R	Lg	2
Oldsmobile 8-88	ICS	Co	.....	$4\frac{1}{4}$	325	100	2150	Del	D	1	LI	Mec[1]	18	44'8"	42'0"	23	BN	Sag	21.3	27.5	.....	Sag	BN	19.0	22.7	B	Sym	R	Tr	2
9-98	ICS	Co	.....	$4\frac{1}{4}$	325	100	2200	Del	D	1	LI	Pow	18	45'8"	43'0"	23	N	.....	.....	.....	.....	Sag	BN	19.0	22.7	B	Sym	R	Tr	2
Pontiac 8-56-27	ICS	Co	.....	$3\frac{13}{16}$	290[11]	81[12]	2085–$10\frac{1}{2}$[13]	Del	D	1	LI	Mec[1]	18	44'11"	42'5"	$22\frac{1}{2}$	RB	Sag	20.0	25.0	.....	Sag	RB	17.5	22.5	B	L-P	R	N	2
8-56-28	ICS	Co	.....	$3\frac{13}{16}$	290[11]	81[12]	2085–$10\frac{1}{2}$[13]	Del	D	1	LI	Mec[1]	18	45'5"	42'11"	$22\frac{1}{2}$	RB	Sag	20.0	25.0	.....	Sag	RB	17.5	22.5	B	L-P	R	N	2
STUDEBAKER-PACKARD CORP.																														
Clipper 8-5640, 5660	ITB	TB[14]	10[15]	N	.....	.....	.....	Mon	D	1	LI	Mec[1]	18	48'0"[17]	43'0"[19]	$23\frac{3}{4}$	WTR	Gem	22.3	30.9	Lk	M-B	WTT	16.4	19.9	B	SI	R	Tr	2
Packard 8-5680	ITB	TB	11[16]	N	.....	.....	.....	Mon	D	1	LI	Mec[1]	18	48'0"[18]	45'0"[20]	$23\frac{3}{4}$	WTR	Gem	22.3	30.9	Lk	M-B	WTT	16.4	19.9	B	SI	R	Tr	2
8-5688	ITB	TB	11[16]	N	.....	.....	.....	Mon	D	1	LI	Pow	18	48'0"[18]	45'0"[20]	$23\frac{3}{4}$	N	.....	.....	.....	Lk	M-B	WTT	16.4	19.9	B	SI	R	Tr	2
Studebaker 8-56B, 56H	ICS	Co	.....	$4\frac{1}{2}$	280[21]	117[22]	1565–$8\frac{7}{16}$[23]	M-D	D	1	LI	Mec[1]	18[24]	42'6"L[25]	39'6"L[26]	23	CTL	Ros	18.5	33.8	In	Sag	RB	21.3	20.0	B	CSE	R	Lg	2
8-56G	ICS	Co	.....	$4\frac{1}{2}$	210[27]	90[28]	1440–$8\frac{1}{16}$[29]	M-D	D	1	LI	Mec[1]	18[24]	42'6"L[25]	39'6"L[26]	23	CTL	Ros	18.5	26.0	In	Sag	RB	21.3	20.0	B	CSE	R	Lg	
8-56J	ICS	Co	.....	$4\frac{1}{2}$	296	125	1565–$9\frac{1}{16}$	M-D	D	1	LI	Mec[1]	$17\frac{1}{4}$	44'0"L	41'0"L	23	CTL	Ros	18.5	33.8	In	Sag	RB	21.3	20.0	B	CSE	R	Lg	2

ABBREVIATIONS

1—Power steering optional.
2—110 with air conditioning.
3—94 with air conditioning.
4—960–$8\frac{5}{8}$ with air conditioning.
5—16.2 optional. 6—20.3 optional.
7—Ford only; Gabriel, $1\frac{1}{16}$.
8—Convertible, $16\frac{3}{8}$.
9—$15\frac{13}{16}$ with auto. trans.
10—1710 with auto. trans.
11—325 with auto trans.
12—90 with auto trans.
13—2185-10 with auto. trans.
14—Coil springs optional on 5622.
15—Main suspension bars only; load compensator bars, $46\frac{1}{2}$.
16—Main suspension bars only; load compensator bars, 51.
17—44' 0" with power steering.
18—46' 0" with power steering.
19—41' 0" with power steering.
20—43' 0" with power steering.
21—Station wagon, 375.
22—Station wagon, 151.
23—Station wagon, 1565–$9\frac{1}{4}$.
24—Power Hawk, Sky Hawk and Flight Hawk, $17\frac{1}{4}$.
25—Power Hawk, Sky Hawk and Flight Hawk, 44' 0" L.
26—Power Hawk, Sky Hawk and Flight Hawk, 41' 0" L.
27—Station wagon, 340.
28—Station wagon, 141.
29—Station wagon, 1440–$8\frac{5}{8}$. **B**—Belt.
BBW—Ball bearing warm and nut.
Ben—Bendix. **BN**—Ball nut.
BNS—Ball nut and sector.
BS—Ball and socket.
Chr—Chrysler Div. **Co**—Coil.
CL—Cam and lever. **CP**—Center point.
CSE—Center steering with equal length tie rods.
CTL—Cam and twin lever.
D—Direct. **De**—DeSoto Div.
Del—Delco Products Div.
DLS—Direct, long and short tie rods.
Do—Dodge Div. **F**—Front.
F-G—Ford or Gabriel.
Fo—Ford Motor Co. **G**—Generator.
Gab—Gabriel.
Gem—Gemmer Mfg. Co. **Gir**—Girling.
HGM—Houde, Gabriel or Monroe.
Hou—Houde.
IBJ—Independent ball joint.
ICS—Independent coil spring.
In—Integral.
ITB—Independent torsion bar.
L—Left.
Li—Link.
Lg—Longitudinal. **Lk**—Linkage.
LI—Linkless.
L-P—Link, parallelogram.
M-B—Monroe and Bendix.
M-D—Monroe or Delco.
Mon—Monroe Auto Equipment Co.
N—No or none. **Par**—Parallelogram.
PDL—Parallel drag link.
Ply—Plymouth Div. **Pow**—Power.
R—Rear of wheels.
RB—Recirculating ball.
RBN—Recirculating ball nut.
RGR—Rack and gear sector and recirculating ball nut.
RL—Relay link. **Ros**—Ross.
Sag—Saginaw Steering Gear Div.
SE—Symmetrical idler arms, equal length tie rods.
SI—Side idler.
SRH—Semi-reversible, hour glass worm and ball bearing roller sector.
SRR—Semi-reversible recirculating ball.
Sym—Symmetrical.
TB—Full length torsion bars.
Tr—Transverse.
WR—Worm and roller.
WTN—Worm and two tooth roller with needle bearing.
WTR—Worm and three tooth roller.
WTT—Worm and two tooth roller.

WHEEL ALIGNMENT, AND REAR SUSPENSION

PASSENGER CAR MAKE AND MODEL	ALIGNMENT: Kingpin: Inclination at Camber (deg.)	Kingpin: Diameter	Kingpin: Bearings: Upper	Kingpin: Bearings: Lower	Kingpin: Bearings: Thrust	Wheel Alignment: Caster (deg.)	Wheel Alignment: Camber (deg.)	Wheel Alignment: Toe In (Outside tread—in.)	Steering Knuckle Type	Wheel Spindle: Diameter: Inner Bearing	Wheel Spindle: Diameter: Outer Bearing	Wheel Spindle: Thread Size	Wheel Spindle: Bearing Type	REAR SUSPENSION: Spring: Type	Spring: Type	Spring: Material	Spring: Length	Spring: Width	Spring: No. Leaves or Coil I. D.	Spring: Spring Rate (lb. per in.)	Spring: Rate at Wheel (lb. per in.)	Spring: Normal Load (lb. @ rated length)	Shock Absorbers: Make	Shock Absorbers: Type	Shock Absorbers: Piston Diameter
AMERICAN MOTORS CORP.																									
Hudson 6-35640	3°36′	.9420	PS	PS	Ba	0 to ½P[1]	¼N to ¼P[2]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	135	135	9a0–10⅝	Mon	D	1
6-35660, 8-35680	3°36′	.9420	PS	PS	Ba	0 to ½P[1]	¼N to ¼P[2]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	135	135	940–10⅝	M-D	D	1
Metropolitan 4-561, 562	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	LS	.....	.....	.....	.....	.....	.....	.....	.....	Gir	D	.....
Nash 6-5640	6°30′	ISK	Ro	Th	Ba	0 to ½P[1]	¼N to ¼P[2]	1/16 to 1/8	PK	1.2560	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	135	135	940–10⅝	Mon	D	1
6-5860, 8-5680	6°30′	ISK	Ro	Th	Ba	0 to ½P[1]	¼N to ¼P[2]	1/16 to 1/8	PK	1.2560	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4½	135	135	940–10⅝	M-D	D	1
Rambler 6-5610	6°11′	ISK	TN	Th	Ba	0 to ½P[4]	⅓N to ¼P	1/16 to 1/8[5]	PK	1.2500	.7500	¾–16	TR	CS	Co	9260[3]	.....	.....	4⅞	96[6]	96[6]	770–10⅛[7]	Del	D	1
CHRYSLER CORP.																									
Chrysler 8-C-71	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.2500	.7500	¾–16	TR	LS	SE	CAS	55	2½	5	90	.....	920–55⅝	Chr	D	1
8-C-72	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.2500	.7500	¾–16	TR	LS	SE	CAS	55	2½	6	95	.....	960–55⅝	Chr	D	1
8-C-72-300	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.2500	.7500	¾–16	TR	LS	SE	CAS	55	2½	7	160	.....	800–55⅝	Chr	D	1
De Soto 8-S-23	5°30′ @ 0°	.7950	Ro	Ro[10]	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.2500	.7500	¾–16	TR	LS	SE	CAS	55	2½	5	90	.....	880–55⅝	De	D	1
8-S-24	5°30′ @ 0°	.7950	Ro	Ro[10]	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.2500	.7500	¾–16	TR	LS	SE	CAS	55	2½	6	90	.....	920–55⅝	De	D	1
Dodge 6-D-62	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16		1.2500	.7500	¾–16	TR	LS	SE	St	52	2½	4	88	.....	680–52⅝	Do	D	1
8-D-63	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16		1.2500	.7500	¾–16	TR	LS	SE	St	52	2½	5	90	.....	720–52⅝	Do	D	1
Imperial 8-C-70	7° @ 0°	.9370	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.3750	.8440	¾–16	TR	LS	SE	CAS	52	2½	7	140	.....	1350–52⅝	Chr	D	1
8-C-73	5°30′ @ 0°	.9370	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	E	1.3750	.8440	¾–16	TR	LS	SE	CAS	52	2½	7	85	.....	1000–52⅝	Chr	D	1
Plymouth 6-P-28, 6-P-29	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	RE	1.2500	.7500	¾–16	TR	LS	SE	CAS	52	2½	4	88	.....	680–52⅝	Ply	D	1
8-P-29-3 Fury	5°30′ @ 0°	.7950	Ro	Lbs	Ba	0 to 2N[8]	½N to 5/16P[9]	1/16	RE	1.2500	.7500	¾–16	TR	LS	SE	CAS	52	2½	6	110	.....	680–52⅝	Ply	D	1
FORD MOTOR CO.																									
Continental 8-80A	7°10′ @ 45′	None	BJ	BJ	BT	¾P to 1½P[11]	0 to ¾P[12]	1/32 to 1/16	BJ	1.3118	.8128	¾–16	TR	LS	SE	5147[13]	56	2	8	135	140	1200	Grab	D	1⅝
Ford 6, 8	7°7′ @ 45′	None	BJ	BJ	BT	0 to 1½P[11]	¼P to 1⅛P[12]	1/32 to 1/16	BJ	1.2496	.7496	¾–16	TR	LS	SE	5147[3]	53	2	5	110	.....	810	HGM	D	1
8-40A, 50B	7°7′	None	BJ	BJ	BT	½P to 1½P[11]	¼P to 1⅛P[12]	1/32 to 1/16	BJ	1.2496	.7496	¾–16	TR	LS	SE	5147[3]	55	2	4	110	.....	810	Gab	D	1
Lincoln 8-73A, 73B	7°12′ @ 45′	None	BJ	BJ	BT	0 to 1½N[11]	0 to ¾P[12]	1/32 to 1/16		1.3118	.8118	¾–16	TR	LS	SE	5147[14]	54[11]	2	.....	115	.....	1030	Hou	D	1½
Mercury 8	7° @ 45′	None	BJ	BJ	BT	0 to 1½N[11]	0 to ¾P[12]	1/32 to 1/16		1.2496	.7496	¾–16	TR	LS	SE	5147[3]	53	2	6	105	.....	860	F-G	D	1
GENERAL MOTORS CORP.																									
Buick 8-40, 60	7° @ 52′30″	.8615	Bu	Bu	Ba	1½N to ½P	5/16N to 7/16P	1/16 to 1/8	RE	1.3738	.8429	1⅞–16	Ba	CS	Co	9260	19[23]	⅝	5½	100	100	960–9⅞	Del	D	1
8-50, 70	7° @ 52′30″	.8615	Bu	Bu	Ba	1½N to ½P	5/16N to 7/16P	1/16 to 1/8	RE	1.3738	.8429	1⅞–16	Ba	CS	Co	9260	19[23]	⅝	5½	115	115	1070–9⅞	Del	D	1
Cadillac 8-60, 62	5°51′ @ 0°	.9240	Br	Br	Ba	½N to 1⅛N[15]	3/16N to 5/16P[16]	3/32 to 1/16[17]	RE	2.9630	2.2500	1¾–20	Ba	LS	SE	5155	56½	2½	5	115[18]		1190–56¼[19]	Del	D	1
8-75	5°51′ @ 0°	.9240	Br	Br	Ba	½N to 1⅛N[15]	3/16N to 5/16P[16]	3/32 to 1/16[17]	RE	2.9630	2.2500	1¾–20	Ba	LS	SE	5155	56½	2½	6	140		1340–56¼	Del	D	1
Chevrolet 6, 8-1500, 2100, 2400	4°	1.3060[20]	SJ	SJ	.....	½P to 1½P	0 to 1P	1/16 to 1/8	RE	1.2493	.7493	¾–20	Ba	LS	SE	CAS	58	2	4	112		1050	Del	D	1
8-2934	4°	.8663	Bu	Bu	Ba	0 to 1P	0 to 1P	0 to 1/16	RE	1.2813	.7501	¾–20	Ba	LS	SE	CAS	51	2	4	115		725	Del	D	1
Oldsmobile 8-88	5°51′10″ @ 0°	.8618	Br	Br	Ba	0 to ¾N	⅛N to ¾P	1/16 to 1/8	RE	1.3739	.7493	¾–20	BC	LS	SE	9260[3]	58	2½	5	95	115	960–59¼	Del	D	1
8-98	5°51′10″ @ 0°	.8618	Br	Br	Ba	0 to ¾N	¼N to ¾P	1/16 to 1/8	RE	1.3739	.7493	¾–20	BC	LS	SE	9260[3]	58	2½	5	100	120	975–59¼	Del	D	1
Pontiac 6-56-27	1°20′ @ 0°	.8620	Br	Br	Ba	½N to 1⅛N	0 to 1P	0 to 1/16	RE	1.3740	.7490	¾–20	Ba	LS	SE	5155[21]	58	2	5	108		900L	Del	D	1
8-56-28	1°20′ @ 0°	.8620	Br	Br	Ba	½N to 1⅛N	0 to 1P	0 to 1/16	RE	1.3740	.7490	¾–20	Ba	LS	SE	5155[21]	60	2	6	120		950L	Del	D	1
STUDEBAKER-PACKARD CORP.																									
Clipper 8-58x0, 5680	5°50′ @ 0°	.8663	Ne	Bu	Ba	½N to 1⅛N	¼N to ¾P	0 to 1/16	RE	1.2500	.7500	¾–16	TR	TB[22]	TB	AS	106[23]	.....	.....	.....	.....	.....	.....	Mon	D	1
Packard 8-5680	5°50′ @ 0°	.8663	Ne	Bu	Ba	½N to 1⅛N	¼N to ¾P	0 to 1/16	RE	1.3120	.8120	⅞–16	TR	TB	TB	AS	111[24]	.....	.....	.....	.....	.....	.....	Mon	D	1
8-5688	5°50′ @ 0°	.8663	Ne	Ne	Ba	½N to 1⅛N	¼N to ¾P	0 to 1/16	RE	1.3120	.8120	⅞–16	TR	TB	TB	AS	111[24]	.....	.....	.....	.....	.....	.....	Mon	D	1
Studebaker 8-56B, 56H, 56J	6° @ 0°	1.2500[25]	Bu	Ne	BTR	1N to 2½N[26]	0 to 1P[27]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LS	SE	5150	50	2½	4[28]	90[29]	100[30]	700[31]	M-D	D	1
6-56G	6° @ 0°	1.2500[25]	Bu	Ne	BTR	1N to 2½N[26]	0 to 1P[27]	1/16 to 1/8	RE	1.2500	.7500	¾–16	TR	LS	SE	5150	50	2½	4[28]	95[29]	105[30]	700[31]	M-D	D	1

ABBREVIATIONS

1—½° positive preferred; ½°P to 1°P, 1° positive preferred with power steering.
2—Zero preferred.
3—Or 5160.
4—½°P to 1°P with power steering.
5—1/32 preferred.
6—106 with rear tire mount or station wagon; 143 special heavy duty.
7—860-10¼ with rear tire mount or station wagon; 860-11⅛ special heavy duty.
8—2° negative preferred with manual steering; zero preferred with power steering; any difference in castor between left and right wheels should make the left side 0° to ¾° more negative castor than the right side.
9—Preferred; left side ½° positive, right side zero.
10—Steel backed, lead bronze bushing with power steering.
11—Not to vary more than ½° from one side to the other.
12—Not to vary more than ¼° from one side to the other.
13—Or 5160, 5155, 4068.
14—Or 5160, 4068.
15—1° negative preferred.
16—Left side to be ¼° to ½° greater than right side.
17—⅛ preferred.
18—Convertible, 120.
19—Convertible, 1230–56¼.
20—Upper part only; lower, 1.2480.
21—Or 5160, 9255.
22—Leaf springs available as special equipment on 5622 models.
23—Long bar only; short bar, 46⅛.
24—Long bar only; short bar, 51.
25—Upper part only; lower, 1.1250.
26—Not more than ¾° variation between wheels.
27—½° greater camber favored on left side.
28—Station wagon, 6.
29—Station wagon, 143.
30—Station wagon, 151.
31—Station wagon, 825.

AS—Alloy steel.
Ba—Ball. **BJ**—Ball joint.
BC—Ball and cone. **Br**—Bronze bushing.
BT—Ball thrust bearing built into ball joint.
BTR—Ball or tapered roller.
Bu—Bushing. **CAS**—Chrome alloy steel.
Chr—Chrysler Div. **CS**—Coil springs.
Co—Coil. **D**—Direct acting.
De—De Soto Div.
Del—Delco Products Div.
Do—Dodge Div.
E—Elliot.
F-G—Ford or Gabriel.
Gab—Gabriel.
Gir—Girling.
HGM—Houde, Gabriel or Monroe.
Hou—Doude.
ISK—Integral with steering knuckle.
L—Left.
Lbs—Lead bronze, steel backed bushing.
LS—Leaf springs.
M-D—Monroe or Delco.
Mon—Monroe Auto Equipment Co.
N—Negative.
Ne—Needle.
P—Positive.
PK—Part of king pin.
Ply—Plymouth Div.
PS—Plain steel bushing.
RE—Reverse Elliot.
Ro—Roller.
SE—Semi-elliptic.
SJ—Spherical joint.
St—Steel.
TB—Full length torsion bars.
Th—Threaded.
TN—Twin needle.
TR—Tapered roller.

For Directory of Car Manufacturers listed above, see page 286

PASSENGER CARS 1956

BRITISH ★ ★ ★ ★ ★

MAKE AND MODEL	ENGINE: Number of Cylinders Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu In.)	ENGINE: Compression Ratio (To — 1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: TREAD Front (In.)	GENERAL DATA: TREAD Rear (In.)	GENERAL DATA: OVERALL DIMENSIONS (In.) Length Including Bumpers and Bumper Guards	GENERAL DATA: OVERALL DIMENSIONS (In.) Width	GENERAL DATA: OVERALL DIMENSIONS (In.) Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive Type	REAR AXLE: Gear Ratio (To —1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
A.C. Ace	6-2.56x3.94	90-4500	121.5	8.00	IL	IH	AA	Ch	90.0	50.0	50.0	151.5	59.5	35.0			3-SU		HS	4	Hy	3.64		FR	H	1685
2 Litre	6-2.56x3.94	76-4500	121.5	6.75	IL	IH	AA	Ch	117.0	55.0	56.0	184.0	67.0	61.0			3-SU		HS	4	Hy	4.55		N	H	2912
Aceca	6-2.56x3.94	90-4500	121.5	8.00	IL	IH	AA	Ch	90.0	50.0	50.0	160.0	61.0	52.0	5.50/16	abce	3-SH	TP	HS	4	Hy	3.91	Sp	FR	H	1849
Alvis T.C.108/G	6-3.30x3.54	104-4000	182.6	8.00	IL	IH	AA	Ch	111.5	54.6	54.1	182.5	66.0	62.5	6.00/15	abce	2-He	Pu	HS	4	Hy	3.77	Sp	Fr	H	3085
Armstrong-Siddeley 30HP	6-3.54x3.54	125-4700	209.6	7.00	IL	IH	AA	Ch	114.0	56.6	57.5	193.0	72.0	63.0	6.70/16	abcde	1-De	Pu	(1)	4	Hy	4.09	Sp	Fr	H	3472
30HP	6-3.54x3.54	150-5000	209.6	7.00	IL	IH	AA	Ch	114.0	56.6	57.5	193.0	72.0	63.0	6.70/16	abcde	2-De[A]	Pu	(1)	4	Hy	4.09	Sp	Fr	H	3472
234	4-3.54x3.54	120-5000	139.7	7.50	IL	IH	AA	Ch	111.0	55.1	54.3	180.0	68.5	61.8	6.40/15	abce	2-De	Pu	HS	4	Hy	4.55	Sp	Fr	H	2912
236	6-2.76x3.94	85-4500	140.9	7.50	IL	IH	AA	Ch	111.0	55.1	54.3	180.0	68.5	61.8	6.40/15	abce	1-De	Pu	HS	4	Hy	4.55	Sp	Fr	H	2912
Aston-Martin DB2-4MkII	6-3.27x3.54	140-5000	178.2	8.20	IL	IH	AA	Ch	99.0	54.0	54.0	171.5	65.0	53.5	6.00/16	abc	2-He	Pu	HS	4	Hy	3.77	Sp	Fr	H	2932
Austin A30-7	4-2.26x3.00	28-4800	48.8	7.20	IL	IH	AA	Ch	79.5	45.3	44.8	138.4	55.1	59.3	5.20/13	abce	1-De	Pu	HS	4	Hy	5.13	Sp	Fr	HM	1562
A135	6-3.44x4.38		244.0	6.80	IL	IH	AA	Ch	119.5	58.0	60.0	196.5	74.5	66.0	6.50/16	abce	1-De	Pu	HS	4	Hy	4.09	Sp	Fr	H	4258
A90-6	6-3.13x3.50	85-4000	161.0	7.30	IL	IH	AA	Ch	103.6	51.5	51.3	170.3	64.0	63.8	6.40/15	abce	1-SD	Pu	HS	4	Hy	3.91	Sp	Fr	H	2912
A40	4-2.57x3.50	42-4500	73.2	7.20	IL	IH	AA	Ch	96.3	48.5	49.0	162.3	61.5	61.5	5.60/15	abce	1-De	Pu	HS	4	Hy	4.88	Sp	Fr	H	2240
A50	4-2.68x3.50	50-4400	91.5	7.20	IL	IH	AA	Ch	96.3	48.5	49.0	162.3	61.5	61.5	5.60/15	abce	1-De	Pu	HS	4	Hy	4.88	Sp	Fr	H	2240
Austin-Healey 100	4-3.44x4.38	90-4000	162.2	7.50	IL	IH	AA	Ch	90.0	49.0	50.0	151.0	60.5	49.3	5.90/15	abce	2-He	Pu	HS	4	SB	3.90	Sp	Fr	H	2176
100S	4-3.44x4.38	132-4700	162.2	8.30	IL	IH	AA	Ch	90.0	49.0	50.8	148.0	60.5	42.0	5.50/15	abce	2-St	Pu	HS	4	SB	2.92	Sp	Fr	H	1888
Bentley S Series Saloon	6-3.75x4.50		295.0	6.60	IL	F	AA	HG	123.0	58.0	60.0	212.0	74.0	64.0	8.20/15	abcde	2-SD	Pu	Au	4	Hy	3.42	Sp	Fr	HM	4146
Continental	6-3.75x4.50		295.0	7.25	IL	F	AA	HG	123.0	58.0	60.0	210.5	72.0	62.0	7.60/15	abcde	2-SD	Pu	Au	4	Hy	2.92	Sp	Fr	HM	3780
Citroen 2CV-A	2-2.44x2.44	9-3800	22.9	6.20	HO	IH	AA	SG	93.5	49.6	49.6	148.8	58.3	63.0	4.90/15	abce	1-SD	AC	HS	4	SB*	3.87*	Sp*	FR	H	1120
Light 15	4-2.99x3.94	56-4250	116.6	6.50	IL	IH	AA	Ch	114.5	54.0	53.3	175.0	65.3	60.0	6.50/15	abce	1-SD	Pu	HS	3	SB*	3.46*	Sp*	Fr	H	2380
Big 15	4-2.99x3.94	56-4250	116.6	6.50	IL	IH	AA	Ch	191.5	58.5	57.8	186.0	70.0	61.0	6.50/15	abce	1-SD	Pu	HS	3	SB*	3.46*	Sp*	Fr	H	2548
6 Cylinder	6-2.99x3.94	76-3800	174.8	6.50	IL	IH	AA	Ch	121.5	58.5	58.5	191.0	70.0	61.0	7.25/15	abce	1-DD	Pu	HS	3	SB*	3.87*	Sp*	Fr	H	2940
2CV-AZ	2-2.60x2.44	12-3800	25.9	6.20	HO	IH	AA	SG	93.5	49.6	49.6	148.8	58.3	63.0	4.90/15	abce	1-De	AC	HS	4	SB	3.87	Sp		H	
2 Litre DS-19	4-3.07x3.94	75-4500	291.8		IL	IH	AS	Ch	123.0	59.0	51.3	189.0	70.5	58.0	6.50/15	abce	1-DD	Pu	HS	4	SB	3.89	RA	FR	H	2484
Daimler 104	6-3.25x4.25	137-4400	211.5	7.60	IL	IH	AA	Ch	114.0	56.0	57.0	193.0	71.0	62.5	6.50/16	abce	2-He	Pu	Pr	4	Hy	3.92	Sp	Fr	H	4032
Four Light Saloon	6-3.75x4.25	167-4200	282.0	7.00	IL	IH	AA	Ch	114.0	56.0	57.0	194.1	70.5	60.5	7.00/16	abce	2-He	Pu	Pr	4	Hy	4.27	Sp	Fr	H	4256
Conquest	6-3.00x3.50	75-4000	148.4	7.00	IL	IH	AA	Ch	104.0	52.0	52.0	178.0	65.0	62.0	6.70/15	abce	1-De	Pu	Pr	4	Hy	4.56	Sp	Fr	MH	3080
Conquest Roadster	6-3.00x3.50	100-4400	148.4	7.75	IL	IH	AA	Ch	104.0	52.0	52.0	178.0	64.0	55.0	5.00/15	abce	2-He	Pu	Pr	4	Hy	3.73	Sp	Fr	MH	2680
Regina	6-3.75x4.25	167-4200	282.0	7.00	IL	IH	AA	Ch	130.0	60.0	63.0	217.0	74.0	72.0	7.50/16	abce	2-He	Pu	Pr	4	Hy	4.27	Sp		H	5120
Dellow MKIIC	4-2.50x3.64	37-4400	71.5	7.00	IL	L	AA	Ch	83.0	45.0	45.0	138.0	53.0	51.0	5.50/16	abce	1-De	Pu	HS	3	SB	5.50	TT	N	M	1288
MKV	4-2.50x3.64	37-4400	71.5	7.50	IL	L	AA	Ch	84.0	45.0	45.0	130.0	54.0	47.0	5.50/16	abce	(2)	Pu	HS	3	SB	4.70	TT	N	M	1234
Fairthorpe Atom I	1-1.65x2.35	11-5400	15.5	6.50	IL	IH	AA	SG	89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch		TA	FR	H	890
Atom IIA	2-2.36x2.24	15-6000	19.6		IL	CC	AA		89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch			FR	H	
Atom III	2-2.75x3.31	35-5750	39.6	6.50	IL	IH	AA	SG	89.0	48.0	48.0	134.0	62.0	54.0	5.20/13	abce	1-St	AC	HS	3	Ch			FR	H	
Ford Zephyr Six	6-3.13x3.00	68-4200	138.0	6.80	IL	IH	AS	Ch	104.0	50.0	49.0	171.9	63.9	60.8	6.40/13	abcde	1-SD	Pu	HS	3	Hy	4.44	Sp	Fr	H	2480
Consul	4-3.13x3.00	47-4400	92.0	6.80	IL	IH	AS	Ch	100.0	50.0	49.0	166.7	64.0	60.8	5.90/13	abcde	1-SD	Pu	HS	3	Hy	4.56	Sp	Fr	H	2255
Anglia	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	151.3	60.6	58.8	5.20/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1623
Prefect	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	151.3	60.6	58.8	5.20/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1721
Popular	4-2.50x3.64	30-4000	71.6	6.16	IL	L	AA	Ch	90.0	45.0	45.0	152.3	56.5	63.8	4.50/17	abcde	1-SD	TS	HS	3	SB	5.50	TT	N	M	1597
Zephyr Zodiac	6-3.13x3.00	71-4200	138.0	7.50	IL	IH	AS	Ch	104.0	50.0	49.0	171.9	63.9	60.8	6.40/13	abcde	1-SD	Pu	HS	3	Hy	4.44	Sp	Fr	H	2522
Escort	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	141.5	60.6	62.3	5.60/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1800
Squire	4-2.50x3.64	36-4500	71.6	7.00	IL	L	AS	Ch	87.0	48.0	47.5	141.8	60.6	62.3	5.60/13	abcde	1-SD	Pu	HS	3	SB	4.43	Sp	Fr	H	1800
Frazer-Nash †Targa Floria Gran Sport	6-2.60x3.78	140-5750	120.2	9.00	IL	IH	AA	Ch	96.0	50.0	52.0	150.0	61.5	36.0	5.50/16	abcde	3-De	Pu	HS	4	SB	3.60	RA	Fr	H	1680
†Targa Floria Turismo	6-2.60x3.78	100-5000	120.7	7.50	IL	IH	AA	Ch	96.0	50.0	52.0	150.0	61.5	36.0	5.50/16	abcde	3-De	Pu	HS	4	SB	3.60	RA	Fr	H	1680
†Competition Mark II	6-2.60x3.78	140-5750	120.2	9.00	IL	IH	AA	Ch	96.0	50.0	54.0	141.0	63.5	36.0	5.50/16	abcde	3-De	Pu	HS	4	SB	3.60	RA	FR	H	1400
Fixed Head Coupe	6-2.60x3.78	140-5750	120.2	9.00	IL	IH	AA	Ch	96.0	50.0	52.0	156.0	61.5	51.0	5.50/16	abcde	3-De	Pu	HS	4	SB	3.60	RA	Fr	H	1850
Sebring	6-2.60x3.78	140-5750	120.2	9.00	IL	IH	AA	Ch	96.0	50.0	52.0	156.0	61.5	51.0	5.50/16	abcde	3-De	Pu	HS	4	SB	3.60	RA	Fr	H	1898
Hillman Minx Special Saloon	4-3.00x3.00	47-4400	85.0	7.00	IL	IH	AA	Ch	93.0	48.6	48.5	162.5	62.5	61.0	5.60/15	abce	1-De	Pu	HS	4	SB	4.78	Sp	Fr	H	2100
Husky	4-2.56x3.74	38-4100	77.2	6.63	IL	L	AA	Ch	84.0	48.6	48.5	148.5	62.0	61.0	5.00/15	abce	1-De	Pu	HS	4	SB	4.78	Sp	Fr	H	1904
MKVIII Convertible	4-3.00x3.00	47-4400	85.0	7.00	IL	IH	AA	Ch	93.0	48.6	48.5	162.5	63.5	60.0	5.60/15	abce	1-De	Pu	HS	4	SB	4.78	Sp	Fr	H	2128
MKVIII Californian	4-3.00x3.00	47-4400	85.0	7.00	IL	IH	AA	Ch	93.0	48.6	48.5	162.5	63.5	60.0	5.60/15	abce	1-De	Pu	HS	4	SB	4.78	Sp	Fr	H	2198
MKVIII Sedan	4-3.00x3.00	47-4400	85.0	7.00	IL	IH	AA	Ch	93.0	48.6	48.5	162.5	63.5	61.0	5.60/15	abce	1-De	Pu	HS	4	SB	4.78	Sp	Fr	H	2108
Humber Hawk VI	4-3.19x4.33	75-4000	138.2	7.00	IL	IH	AA	Ch	105.5	56.0	57.0	181.5	72.0	64.8	6.40/15	abce	1-De	Pu	HS	4	Hy	4.55	Sp	Fr	H	2960
Super Snipe	6-3.50x4.37	131-3900	252.6	7.36	IL	IH	AA	Ch	115.7	57.9	56.2	197.0	73.5	68.0	7.00/15	abcde	1-De	Pu	HS	4	Hy	4.10	Sp	Fr	H	3873
Jaguar MKVIIIM	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	120.0	56.5	58.0	196.5	73.0	63.0	6.70/16	abcde	2-SH	TP	HS	4	Hy	4.27	Sp	Fr	H	3780
XK140 Sports	6-3.27x4.17	190-5500	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	53.5	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	2770
XK140 Sports SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.0	51.4	176.0	64.5	53.5	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	2770
XK140 DH Coupe	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	55.0	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	3000
XK140 DH Coupe SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.0	51.4	176.0	64.5	55.0	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	3000
XK140 FH Coupe	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.5	50.5	176.0	64.5	55.0	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	2890
XK140 FH Coupe SE	6-3.27x4.17	210-5750	210.0	8.00	IL	IH	AT	Ch	102.0	51.0	51.4	176.0	64.0	55.0	6.00/16	abcde	2-SH	TP	HS	4	Hy	3.54	Sp	Fr	H	2880
2.4 Litre	6-3.27x3.01	112-5750	151.5	9.00	IL	IH	AT	Ch	107.5	54.5	50.0	181.0	67.0	57.5	6.40/15	abcde	2-SD	TP	HS	4	Hy	4.55	TaS	Fr	H	2900
Jensen Interceptor	6-3.43x4.37	130-4000	243.0	6.80	IL	IH	AA	Ch	112.0	54.0	57.0	188.0	66.0	58.0	6.00/16	abce	1-De	Pu	HS	5	Hy	3.77	Sp	Fr	H	2800
541	6-3.43x4.37	130-3800	243.4	6.80	IL	IH	AA	Ch	105.0	52.0	52.0	174.0	63.0	53.0	6.00/16	abce	3-SU	TP	HS	4	Hy	3.31	Sp	Fr	H	2500
Kieft FWA	4-2.85x2.83	72-6200	67.0	8.80	IL	IH	AA	Ch	90.0	50.5	50.5	142.0	55.0	38.0	5.00/15	abc	2-St	Pu	HS	4	Hy	4.30		FR	M	1176
Lagonda 3 Litre Coupe	6-3.27x3.54	140-5000	178.2	8.20	IL	IH	AA	Ch	113.5	56.8	56.8	196.0	69.5	62.0	6.00/16	abc	2-He	Pu	HS	4	Hy	4.56	TT	FR	H	3556
3 Litre Saloon	6-3.27x3.54	140-5000	178.3	8.20	IL	IH	AA	Ch	113.5	56.8	56.8	196.0	69.5	62.0	6.00/16	abc	2-He	Pu	HS	4	Hy	4.56	TT	FR	H	3696

For abbreviations, see page 153

For Directory of Car Manufacturers listed above, see page 286

★ ★ ★ ★

OTHER FOREIGN CARS

MAKE AND MODEL	ENGINE: Number of Cylinders Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M.	ENGINE: Piston Displacement (Cu In.)	ENGINE: Compression Ratio (To — 1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	GENERAL DATA: TREAD Front (In.)	GENERAL DATA: TREAD Rear (In.)	GENERAL DATA: OVERALL DIMENSIONS (In.) Length Including Bumpers and Bumper Guards	GENERAL DATA: OVERALL DIMENSIONS (In.) Width	GENERAL DATA: OVERALL DIMENSIONS (In.) Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive Type	REAR AXLE: Gear Ratio (To —1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
BRITISH—continued																										
Lancheste... Sprite	4-3.00x3.50	60-4200	88.9	7.00	IL	IH	AA	Ch	100.0	51.0	51.0	170.0	64.0	60.0	5.90/15	abce	1-Do	Pu	Au	4	Hy	4.44	Sp	Fr	H	2470
Lea-Francis... 18 HP	4-3.35x4.33	95-4000	163.0	7.20	IL	IH	AA	Ch	111.0	52.1	52.4	184.0	64.0	60.5	6.00/16	abce	1-St	Pu	HS	4	Hy	3.91	Sp	Fr	H	3024
...Sports 2½ Litre	4-3.35x4.33	125-5000	163.0	8.00	IL	IH	AA	Ch	99.0	52.1	52.4	168.0	62.0	52.0	6.00/16	abce	2-St	Pu	HS	4	Hy	3.64	Sp	Fr	H	2576
...14 HP	4-2.95x3.94	70-4700	108.0	7.25	IL	IH	AA	Cl.	111.0	52.1	52.4	184.0	64.0	60.5	6.00/16	abce	1-St	Pu	HS	4	Hy	4.88	Sp	Fr	H	2828
14 HP Estate Car	4-2.95x3.94	65-4700	108.0	7.25	IL	IH	AA	Ch	111.0	52.1	52.4	184.0	64.0	64.0	6.00/16	abce	1-St	Pu	HS	4	Hy	4.88	Sp	Fr	H	2828
MG... Magnette	4-2.88x3.50	80-4600	90.8	7.15	IL	IH	AA	Ch	102.0	51.0	51.0	169.0	63.0	58.0	5.50/15	abce	2-SSd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2400
...Series A	4-2.88x3.50	68-5500	90.9	8.15	IL	IH	AA	Ch	94.0	47.9	48.8	156.0	58.0	50.0	5.60/15	abce	2-SSd	Pu	HS	4	Hy	4.30	Sp	Fr	H	1980
Morgan... Plus 4	4-3.35x3.62	68-4200	127.8	6.70	IL	IH	AA	Ch	96.0	47.0	47.0	144.0	56.0	52.5	5.25/16	abcde	1-Do	Pu	HS	4	Hy	4.10	Sp	Fr	H	1700
...Plus 4TR	4-3.27x3.62	90-4800	121.5	8.50	IL	IH	AA	Ch	96.0	47.0	47.0	144.0	56.0	52.5	5.25/16	abcde	2-St	Pu	HS	4	Hy	3.72	Sp	Fr	H	1700
...4/4 Series 2	4-2.50x3.64	36-4400	71.6	7.00	IL	L	AA	Ch	96.0	47.0	47.0	144.0	56.0	50.0	5.00/16	abce	1-Do	TP	HS	3	Hy	4.44	Sp	Fr	H	1430
Morris... Oxford Series II	4-2.88x3.50	50-4200	90.9	7.43	IL	IH	AA	Ch	97.0	53.5	53.0	170.0	65.0	63.0	5.50/15	abce	1-SSd	Pu	HS	4	Hy	4.88	Sp	Fr	H	2340
...Minor Series II	4-2.28x3.00	30-4800	48.8	7.20	IL	IH	AT	Ch	86.0	50.6	50.3	148.0	61.1	60.0	5.00/14	abce	1-SSd	Pu	HS	4	Hy	5.29	Sp	Fr	H	1722
...Cowley	4-2.56x3.50	42-4500	73.2	7.59	IL	IH	AA	Ch	97.0	53.5	53.0	171.0	65.0	63.0	5.60/15	abce	1-SSd	Pu	HS	4	Hy	5.13	Sp	Fr	H	2296
...Isis	6-3.13x3.50	86-4250	161.0	7.30	IL	IH	AA	Ch	107.5	53.6	53.5	178.0	65.0	63.8	6.00/15	abce	1-Sd	Pu	HS	4	Hy	4.10	Sp		H	2844
Riley... Pathfinder	4-3.17x4.73	110-4500	149.0	7.25	IL	IH	AA	Ch	113.5	54.0	54.5	183.0	67.0	60.0	6.00/16	abce	2-SH	Pu	HS	4	Hy	4.10	TA	Fr	H	3412
Rolls-Royce Silver Cloud	6-3.75x4.50		295.0	8.00	IL	F	AA	HG	123.0	58.0	60.0	212.0	74.0	64.0	6.20/15	abcde	2-SD	Pu	Au	4	Hy	3.42	Sp	Fr	HM	4145
...Silver Wraith	6-3.75x4.50		295.0	8.00	IL	F	AA	HG	133.0	62.0	64.0	(11)	(11)	(11)	7.50/16	abcde	1-SD	Pu	Au	4	Hy	4.25	Sp	Fr	HM	(11)
Rover... 75	6-2.88x3.50	80-4500	136.0	7.20	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3149
...60	4-3.06x4.13	60-4000	121.8	6.90	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3002
...90	6-2.88x4.13	93-4500	160.9	7.50	IL	F	AA	Ch	111.0	52.0	51.5	178.2	65.6	63.7	6.00/15	abce	1-SH	Pu	HS	4	SB	4.30	Sp	Fr	H	3227
Singer... Hunter Saloon	4-2.87x3.52	48-4200	91.3	7.10	IL	IH	AA	Ch	107.5	50.5	51.0	177.0	63.0	64.0	6.50/16	abc	1-Do	Pu	HS	4	Hy	5.13	Sp	Fr	M	2548
...SM Roadster	4-2.87x3.52	48-4200	91.3	7.10	IL	IH	AA	Ch	91.0	46.8	46.8	156.0	58.0	58.5	5.00/16	abc	1-Do	Pu	HS	4	Hy	4.88	Sp	Fr	M	1736
SM Roadster (Twin)	4-2.87x3.52	58-4600	91.3	7.47	IL	IH	AA	Ch	91.0	46.8	46.8	156.0	58.0	58.5	5.00/16	abc	2-Do	Pu	HS	4	Hy	4.44	Sp	Fr	M	1736
...Hunter	4-2.88x3.52	50-4200	91.5	7.20	IL	IH	AA	Ch	107.5	50.5	51.0	177.0	63.0	64.0	5.50/16	abc	1-Do	Pu	HS	4	Hy	5.13	Sp	Fr	H	2604
...Hunter S	4-2.88x3.52	50-4200	91.5	7.20	IL	IH	AA	Ch	107.5	50.5	51.0	176.0	63.0	64.0	5.50/16	abc	1-Do	Pu	HS	4	Hy	5.13	Sp	Fr	H	2492
...Hunter 75	4-2.88x3.52	75-5250	91.5	8.00	IL	IH	AA	Ch	107.5	50.5	51.0	177.0	63.0	64.0	5.50/16	abc	2-Do	Pu	HS	4	Hy	5.13	Sp	Fr	H	2688
Standard... Vanguard	4-3.35x3.62	68-4200	127.8	7.50	IL	IH	AA	Ch	102.0	51.0	51.0	172.0	67.5	61.5	5.50/16	abcde	1-SD	Pu	HS	3	Hy	4.30	Sp	Fr	H	2562
...Eight	4-2.28x2.99	28-4500	49.0	7.00	IL	IH	AA	Ch	84.0	48.5	48.5	142.0	58.0	60.0	5.20/13	abce	1-SD	Pu	HS	4	Hy	4.88	Sp	Fr	H	1494
...Ten	4-2.48x2.99	33-4500	57.8	7.00	IL	IH	AA	Ch	84.0	48.5	48.5	145.0	58.0	60.0	5.60/13	abce	1-SD	Pu	HS	4	Hy	4.88	Sp	Fr	H	1598
Sunbeam... MK III	4-3.19x4.33	86-4400	138.2	7.50	IL	IH	AA	Ch	97.5	47.5	50.5	168.0	62.5	60.8	5.50/16	abce	1-Do	Pu	HS	4	Hy	(3)	Sp	Fr	H	2926
...Rapier	4-3.00x3.00	62-5000	85.0	8.00	IL	IH	AA	Ch	96.0	49.0	48.5	160.5	60.8	58.0	5.60/15	abce	1-SD	Pu	HS	4	SB	5.22	Sp	Fr	H	2280
Triumph... Sports	4-3.29x3.62	100-5000	121.5	8.50	IL	IH	AA	Ch	88.0	45.0	45.5	151.0	55.5	50.0	5.50/15	abcde	2-He	Pu	HS	4	Hy	3.70	Sp	Fr	H	1981
Vauxhall... Wyvern	4-3.13x3.00	46-4000	92.0	6.50	IL	IH	AA	Ch	103.0	53.2	54.5	170.8	66.6	63.5	5.60/15	abce	1-Do	Pu	HS	3	Hy	4.62	Sp	Fr	H	2240
...Wyvern	4-3.13x3.00	48-4000	92.0	7.30	IL	IH	AA	Ch	103.0	53.2	54.5	170.8	66.6	63.5	5.60/15	abce	1-Do	Pu	HS	3	Hy	4.62	Sp	Fr	H	2240
...Velox	6-3.13x3.00	66-4000	138.0	6.50	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	3378
...Velox	6-3.13x3.00	68-4000	138.0	7.30	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-De	Pu	HS	3	Hy	4.12	Sp	Fr	H	3370
...Cresta	6-3.13x3.00	66-4000	138.0	6.50	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-Do	Pu	HS	3	Hy	4.12	Sp	Fr	H	2395
...Cresta	6-3.13x3.00	68-4000	138.0	7.30	IL	IH	AA	Ch	103.0	53.2	54.5	172.1	66.6	63.5	5.90/15	abce	1-De	Pu	HS	3	Hy	4.12	Sp	Fr	H	2395
Wolseley... 4-44	4-2.62x3.54	46-4800	76.3	7.30	IL	IH	AA	Ch	102.0	50.7	51.0	173.0	61.0	60.0	5.50/15	abce	1-SSd	Pu	HS	4	Hy	5.13	Sp	Fr	H	2422
...6-90	6-3.13x3.50	95-4500	161.0	7.30	IL	IH	AA	Ch	113.5	54.4	54.5	188.0	67.0	62.0	6.00/15	abce	2-SH	Pu	HS	4	Hy	4.10	TA	Fr	H	3248
AUSTRALIA																										
Holden... Standard FJ-215	6-3.00x3.12	60-3800	132.5	6.50	IL	IH	AA	HG	103.0	53.0	54.0	173.3	66.8	64.0	5.50/15	abce	1-SD	Pu	HS	3	SbH	3.89	Sp	Fr	H	2154
...Business FJ-217	6-3.00x3.12	60-3800	132.5	6.50	IL	IH	AA	HG	103.0	53.0	54.0	173.3	66.8	63.9	5.50/15	abce	1-SD	Pu	HS	3	SbH	3.89	Sp	Fr	H	2198
...Special FJ-225	6-3.00x3.12	60-3800	132.5	6.50	IL	IH	AA	HG	103.0	53.0	54.0	173.3	66.8	64.0	5.90/15	abce	1-SD	Pu	HS	3	SbH	3.89	Sp	Fr	H	2177
AUSTRIA																										
Steyr-Daimler-Puch																										
...WB405A	4-3.35x3.46	70-4000	121.8	7.00	IL	IH	AA	Ch	104.3	52.4	52.6	169.5	65.0	60.0	6.40/14	abce	1-SD	Pu	Pr	5	Hy	4.63	Sp	Fr	H	2535
...WB405B	4-3.35x3.46	70-4000	121.8	7.00	IL	IH	AA	Ch	104.3	52.4	53.1	169.5	65.0	59.5	(4)	abce	1-SD	Pu	Pr	4	Hy	4.63	Sp	Fr	H	2337
...WB405C	4-3.35x3.46	80-4500	121.8	8.00	IL	IH	AA	Ch	104.3	52.4	52.4	169.5	65.0	60.0	6.40/14	abce	1-DD	Pu	Pr	5	Hy	4.63	Sp	Fr	H	2540
CZECHOSLOVAKIA																										
Skoda... 440	4-2.68x2.96	40-4200	66.5	7.00	IL	IH	AA	Ch	94.5	47.6	49.3	160.5	63.0	58.4	5.50/15	abce	1-De	Pu	HS	4	SB	4.78	TF	FR	H	1976
...1201	4-2.84x2.96	45-4400	74.4	7.00	IL	IH	AA	Ch	105.8	49.3	52.0	177.2	66.5	59.8	6.00/15	abce	1-De	Pu	HS	4	SB	5.25	TF	FR	H	2284
FRANCE																										
Bugatti... 101	8-2.82x3.94	200-5500	196.0	8.50	IL	IH	AA	HG	130.0	53.2	53.2	212.4	65.0	65.0	6.00/17	abcde	1-DD	Pu	HS	4	SB		TA	N	H	
Citroen... 2CVAZ	2-2.60x2.44	12-3500	25.9	6.25	HO	IH	AA	HG	94.5	49.6	49.6	149.0	58.3	63.0	4.90/15	abce	1-Do	AC	HS	4	SB	4.84		FR	H	1078
...11B Normale	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	121.8	58.9	58.0	183.1	70.5	70.5	6.50/15	abce	2-SD	Pu	HS	3	SB	3.45		Fr	H	2462
...11B Familiale	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	126.7	58 9	58 0	191.0	70.5	70.5	7.25/15	abce	2-SD	Pu	HS	3	SB	3.45		Fr	H	2598
...11BL Legere	4-3.07x3.94	65-4000	116.5	6.80	IL	IH	AS	Ch	114.6	54.1	53.3	175.2	65.7	59.9	6.50/15	abce	1-SD	Pu	HS	3	SB	3.45		Fr	H	2347
...DS19	4-3.07x3.94	75-4500	116.5	7.50	IL	T	AS	Ch	123.2	59.1	51.4	189.0	70.5	58.0	(12)	abce	1-DD	Pu		4	SB	3.89		FR	H	2468

For abbreviations, see page 153

For Directory of Car Manufacturers listed above, see page 286

OTHER FOREIGN CARS—*continued*

MAKE AND MODEL	ENGINE								GENERAL DATA													REAR AXLE					
	Number of Cylinders Bore and Stroke (In.)	Maximum Brake Hp. at Specified R.P.M.	Piston Displacement (Cu In.)	Compression Ratio (To – 1)	Cylinder Arrangement	Valve Location	Piston Material	Camshaft Drive	Wheelbase (In.)	TREAD Front (In.)	TREAD Rear (In.)	OVERALL DIMENSIONS (In.) Length Including Bumpers and Bumper Guards	OVERALL DIMENSIONS (In.) Width	OVERALL DIMENSIONS (In.) Height—Road to Roof, No Load	Tires (In.)	Oil Pressure to—	Carburetors—No. Used and Type	Cooling System	Shifting Method	No. of Forward Speeds	Final Drive Type	Gear Ratio (To – 1)	Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
FRANCE—*continued*																											
Panhard Junior	2-1.78x2.85	42-5000	14.2	7.25	HO		AA		83.9	44.7	44.7	145.7	59.1	51.2	5.70/15		1-DD	AC	HS	4				FR	H	
Dyna 54	2-1.78x2.85	42-5000	14.2	7.25	HO	IH	AA		101.4	51.2	51.2	179.9	63.0	57.1	5.70/15		1-DD	AC	HS	4				FR	H	
Peugeot 203	4-2.96x2.88	45-4500	78.7	6.97	IL	IH	AA	Ch	101.5	52.0	52.0	171.2	63.5	61.5	6.00/15		1-Do	Pu	HS	4	We	5.75	TT	Fr	H	1980
403	4-3.15x2.88	58-4900	88.5	7.00	IL	IH	AA	Ch	104.8	52.8	52.0	176.4	65.8	57.9	6.50/15		1-Do	Pu	HS	4	We	5.75	TT	Fr	H	2248
Renault R1062 Serie	4-2.15x3.15	26-4100	45.6	7.25	IL	IH	AS	HG	82.7	47.9	48.0	143.2	56.3	57.9	5.00/15	abce	1-Do	Pu	HS	3	SB	4.71		FR	H	1213
R1100	4-3.35x3.46	74-4000	121.8	7.00	IL	IH	AS	HG	110.2	55.1	55.1	185.0	67.7	63.0	6.40/15	abce	1-Do	Pu	HS	4	SB	4.86	TA	FR	H	2711
R1062 Sport	4-2.15x3.15	26-4500	45.6	7.25	IL	IH	AS	HG	82.7	47.9	48.0	143.2	56.3	57.9	5.00/15	abce	1-Do	Pu	HS	3	SB	4.71		FR	H	1213
R1101	4-3.46x3.46	77-4000	130.7	7.00	IL	IH	AS	HG	110.2	55.1	55.1	185.0	67.7	63.0	6.40/15	abce	1-Do	Pu	HS	4	SB	4.86	TA	FR	H	2793
Rovin 3CVCD4	2-2.76x2.36	13-3200	28.2		HO				70.9	38.6	38.6	154.0	45.3	39.2	3.50/10		1-SU		HS	3			Sp	N	M	
Salmson 2300S	4-3.31x4.13	110-5000	140.3	7.50	IL	IH	AA	HG	105.7	53.9	53.5	173.6	65.7	56.9	6.25/25	abe	1-Dt	Pu	HS	4	SB	3.62		Fr		
Simca 1300	4-2.91x2.95	48-4500	74.5	6.75	IL	IH	AA	Ch	96.1	49.4	49.2	160.0	61.0	57.0	5.60/14	abc	1-SD	Pu	HS	4	Hy	4.44	Sp	Fr	H	2009
1300	4-2.91x2.95	57-4800	74.5	7.85	IL	IH	AA	Ch	96.0	49.4	49.2	167.0	62.0	56.0	5.60/14	abc	1-SD	Pu	HS	4	Hy	4.44	Sp	Fr	H	2030
F52A Vedette 56	8-2.60x2.95	80-4600	143.5	7.20	V	L			106.0	54.0	53.0	178.0	69.1	58.3	6.40/13				HS	3	Hy	3.90				3626
F42A	8-2.60x3.38	75-4400	143.6	7.00	V	L	AA	HG	106.0	54.0	53.0	178.0	69.1	58.3	6.40/...	abc	1-Do	Pu	HS	3	Hy	3.90	Sp	Fr	H	2454
Talbot Grand Sport	6-3.66x4.33	210-4500	273.4	8.00	IL	IH	AS	Ch	114.2	55.9	52.5				6.00/18	abcde	3-Do	Pu	Pr	4	SB	3.35	Sp	Fr	H	3527
Largo Sport	4-3.53x3.90	120-5000	152.0	7.00	IL	IH	AA	Ch	98.5	51.2	51.2	165.1	64.6	51.6	6.50/15	abcd	2-Dt	Pu	HS	4	SB	3.36	TT	Fr	H	2310
GERMANY																											
BMW 503	8-3.23x2.95	140-...	193.0	7.50	V	IH	AA	Ch	111.6	55.0	55.9	186.5	68.0	55.0	6.00/16	abcde	2-DD	Pu	HS	4	Hy	3.90	TA	Fr	H	3180
507	8-3.23x2.95	140-...	193.0	7.50	V	IH	AA	Ch	97.5	57.0	56.2	172.0	65.0	50.0	6.00/16	abcde	2-DD	Pu	HS	5	Hy	3.70	TA	Fr	H	2530
Borgward Hansa 2400 Pullman	6-3.07x3.21	100-...	142.6	8.00	IL	IH	AA	HG	111.0	53.5	56.0	189.5	70.1	58.8	6.70/15		1-...	Pu	HA	4	Hy	3.90		FR	H	3316
Isabella	4-2.95x3.33	80-4700	91.1	6.80	IL	IH	AA	HG	102.4	52.5	53.5	172.8	67.1	57.7	5.90/13	abcd	1-DS	Pu	HS	4	Hy	3.90	Sp	FR	H	
Isabella TS	4-2.96x3.33	75-...	91.0	8.20	IL	IH	AA	BG	102.4	53.7	53.5	173.0	67.2	57.7	5.90/13	abcd	1-...	Pu	HS	4	Hy	3.90		FR	M	2205
DKW 3-6	3-2.80x2.99	42-4200	54.7		IL	N	AA	N	92.0	50.0	53.0	166.0	66.0	57.5	5.60/15	N	1-Do	TS	HS	4	StB	4.72		FR	H	1863
Ford Taunus 12M	4-2.50x3.64	43-4250	71.5	6.80	IL	L	AS	HG	98.0	48.0	48.0	160.0	62.2	61.0	5.60/13	abc	1-Do	Pu	HS	3	SB	4.44	Sp	Fr	H	1810
15M	4-3.23x2.79	60-4500	81.7	7.00	IL	IH	AS	HG	98.0	48.0	48.0	160.0	62.2	61.0	5.60/13	abce	1-SD	Pu	HS	3	Hy	4.11	Sp	Fr	H	1904
Glas Parallel-Twin	2-2.28x2.21	17-4800	17.9	6.00	HO		AA	BG	70.8	42.8	42.8	114.2	50.4	51.5	4.40/10		1-...	AC		4				FR	H	851
Goliath GP700	2-2.91x3.15	26-4000	42.0	6.40	IL		AA	SG	90.6	49.5	49.5	163.4	63.0	57.1	5.60/15		1-Do	Pu	HS	4	HG		Sp	Fr	H	1913
700E	2-3.30x3.20	27-4000	42.0	7.70	IL		AS	SG	90.6	51.7	49.2	159.4	64.2	57.9	5.60/13		1-Do	Pu	HS	4	SG	4.73	Sp	FR	H	
Lloyd LP400S, LS400S	2-2.44x2.52	13-3250	23.5	6.85	IL	N	AA	N	78.7	41.3	43.3	135.8	55.3	55.1	4.25/15	N	1-St	AC	HS	3	StB	4.82	Sp	FR	H	1003
LP600, LS600, LC600	2-2.26x1.88	19-4500	38.4	6.60	IL	IH	AA	Ch	78.8	41.4	43.3	132.1	55.6	55.2	4.25/15	a	1-Do	AC	HS	3	...	4.50	Sp	FR	H	1100
LT600	2-2.26x1.88	19-4500	38.4	6.60	IL	IH	AA	Ch	92.6	47.3	47.3	139.0	60.8	63.8	5.00/15	a	1-Do	AC	HS	3	...	4.87	Sp	FR	H	1320
Mercedes-Benz 220A	6-3.15x2.86	92-4800	134.0	7.60	IL	IH	AA	Ch	106.5	56.3	57.9	183.5	69.3	60.3	6.70/13	abcde	1-Do	Pu	HS	4	Hy	4.10	TA		H	2920
190SL	4-3.34x3.29	120-5700	115.7	8.50	IL	IH	AA	Ch	94.5	56.5	58.0	166.0	69.0	52.0	6.40/13	abcde	2-...	Pu	HS	4	Hy	3.90	TA	FR	H	2560
300SC	6-3.34x3.47	200-5400	182.8	8.55	IL	IH	AA	Ch	114.0	58.3	60.0	185.0	75.5	59.5	6.50/15	abcde	.....	Pu	HS	4	Hy	4.44	TA	FR	H	3640
Opel Olympia, Rekord	4-3.15x2.71	51-4200	90.8	6.90	IL	IH	AS	HG	97.9	47.2	49.9	165.8	64.0	61.0	5.60/13	abcde	1-Do	Pu	HS	3	Hy	3.90	Sp	Fr	H	1907
Caravan	4-3.15x2.91	51-4200	90.8	6.90	IL	IH	AS	HG	97.9	47.4	49.9	166.5	64.0	62.8	6.40/13	abcde	1-Do	Pu	HS	3	Hy	4.22	Sp	Fr	H	2083
Kapitan	6-3.15x3.23	81-4000	150.9	7.10	IL	IH	AS	HG	108.3	54.0	54.0	186.0	69.3	61.4	6.40/13	abcde	1-Do	Pu	HS	3	Hy	3.90	Sp	Fr	H	2568
Porsche 356A/1300 Super	4-2.94x2.91	60-5500	78.7	8.20	HO	IH	AA	HG	82.7	51.5	50.2	155.6	65.5	51.2	5.60/15	abce	2-Do	AC	HS	4	SB	4.42	TA	FR	H	1830
356A/1300	4-2.94x2.91	44-4200	78.7	6.50	HO	IH	AA	HG	82.7	51.5	50.2	155.6	65.5	51.2	5.60/15	abce	2-Do	AC	HS	4	SB	4.42	TA	FR	H	1830
356A/1600	4-3.25x2.92	60-4500	97.1	7.50	HO	IH	AA	HG	82.7	51.7	50.2	155.7	65.8	51.6	5.60/15	abc	2-SD	AC	HS	4	SB	4.43	TA	FR	H	1782
356A/1600S	4-3.25x2.92	75-5000	97.1	8.50	HO	IH	AA	HG	82.7	51.7	50.2	155.7	65.8	51.6	5.60/15	abc	2-SD	AC	HS	4	SB	4.43	TA	FR	H	1782
356A/1500GS	4-3.35x2.60	100-6200	91.5	8.70	HO	IH	AA	VS	82.7	51.7	50.2	155.7	65.8	51.6	5.90/15	ab	2-DD	AC	HS	4	SB	4.43	TA	FR	H	1782
550/1500RS	4-3.35x2.60	110-6200	91.5	9.50	HO	IH	AA	VS	82.7	50.8	49.2	140.9	61.1	40.0	(13)	ab	2-DD	AC	HS	4	SB	(14)	TA	FR	H	1320
Volkswagen 1/11	4-3.03x2.52	30-3400	72.7	6.60	HO	IH	AS	HG	94.5	50.8	49.2	160.2	60.6	59.1	5.60/15	abc	1-SD	AC	HS	4	SB	4.40	TA	FR	▪	1530
2/22	4-3.03x2.52	30-3400	72.7	6.60	HO	IH	AS	HG	94.5	53.9	53.5	165.0	68.0	76.5	6.40/15	abc	1-SD	AC	HS	4	SDR	6.20	TA	FR	H	2370
ITALY																											
Abarth Spyder 210A																											
Berlina Fiat 600																											
Spyder 207A	4-2.68x2.96	66-6000	66.5	9.00	IL	IH			80.8	48.4	47.6	142.7	61.5	37.1	5.20/14		2-Ho	Pu	HS	4		4.30		Fr	H	1155
Spyder 208A																											
Berlinetta 209A																											
Alfa-Romeo 1900/AR 52	4-3.25x3.46	65-4400	114.9	7.00	IL	IH	AA	Ch	86.6	51.1	51.1	138.5	58.2	71.6	6.40/16	abce	1-SD	Pu	HS	8	SB	4.10	Sp	Fr	H	2870
Giulietta Sprint	4-2.95x2.95	65-6000	78.7	8.00	IL	IH	AA	Ch	93.7	50.0	50.0	153.5	60.6	51.2	6.10/15	abcde	1-DD	Pu	HS	4	Hy	4.55	TT	Fr	H	1764
1900 Super	4-3.33x3.46	90-5200	120.5	7.50	IL	IH	AA	Ch	103.5	52.0	52.0	174.8	63.0	58.7	6.50/15	abcde	1-SU	Pu	HS	4	Hy	4.10	TT	Fr	H	2513
1900 C Super Sprint	4-3.33x3.46	115-5500	120.5	8.00	IL	IH	AA	Ch	98.4	51.3	51.3	176.2	63.4	52.2	6.50/15	abcde	2-DD	Pu	HS	5	Hy	4.55	TT	Fr	H	2205
1900 TI Super	4-3.33x3.46	115-5500	120.5	8.00	IL	IH	AA	Ch	103.5	52.0	52.0	174.8	63.0	58.7	6.50/15	abcde	2-DD	Pu	HS	4	Hy	4.10	TT	Fr	H	2513
Giulietta Sedan	4-2.92x2.96	50-5200	78.6	7.50	IL	IH	AA	Ch	93.8	50.4	50.4	157.2	61.3	55.4	6.10/15	abcde	1-SD	Pu	HS	4	...	4.55	TT	Fr	...	1937
Giulietta Spider	4-2.92x2.96	65-6000	78.6	8.00	IL	IH	AA	Ch	86.6	50.0	50.0	150.5	61.1	52.4	6.10/15	abcde	1-DD	Pu	HS	4	Hy	4.55	TT	Fr	...	1760
Ferrari 250 Europa	12-2.68x2.68	200-6300	180.8	8.00	V	IH		Ch	109.2	51.7	51.5				7.10/15	abcde	3-DD	Pu	HS	4				Fr	H	2300
375 America	12-3.31x2.68	300-6300	275.8	8.00	V	IH		Ch	109.2	51.7	51.5				7.10/15	abcde	3-DD	Pu	HS	4				Fr	H	2300
375 Millemiglia	12-3.31x2.68	340-7000	275.8	9.00	V	IH			105.9	52.2	52.0				(5)		3-DF	Pu	HS	4				Fr	H	1984

For abbreviations, see page 153

For Directory of Car Manufacturers listed above, see page 286

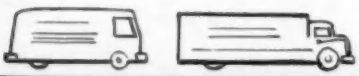
OTHER FOREIGN CARS—*concluded*

MAKE AND MODEL	ENGINE: Number of Cylinders, Bore and Stroke (In.)	ENGINE: Maximum Brake Hp. at Specified R.P.M	ENGINE: Piston Displacement (Cu In.)	ENGINE: Compression Ratio (To —1)	ENGINE: Cylinder Arrangement	ENGINE: Valve Location	ENGINE: Piston Material	ENGINE: Camshaft Drive	GENERAL DATA: Wheelbase (In.)	TREAD: Front (In.)	TREAD: Rear (In.)	OVERALL DIMENSIONS (In.): Length Including Bumpers and Bumper Guards	OVERALL DIMENSIONS (In.): Width	OVERALL DIMENSIONS (In.): Height—Road to Roof, No Load	GENERAL DATA: Tires (In.)	GENERAL DATA: Oil Pressure to—	GENERAL DATA: Carburetors—No. Used and Type	GENERAL DATA: Cooling System	GENERAL DATA: Shifting Method	GENERAL DATA: No. of Forward Speeds	REAR AXLE: Final Drive Type	REAR AXLE: Gear Ratio (To —1)	REAR AXLE: Torque Taken By	Independent Suspension	Service Brakes	Shipping Weight (Lb.)
ITALY—*continued*																											
500 Mondial	4-3.54x3.07	170-7000	121.1	9.50	IL	IH			88.5	50.3	50.6				(6)		2-Dt	Pu	HS	5				Fr	H	1543
750 Monza	4-4.05x3.54	255-6200	183.0	8.00	IL	IH		SG	88.6	50.3	50.6				6.00/16		2-	Pu		5					H	
250 G-T	12-2.87x2.31	220-7000	180.1	9.00	V	IH		Ch	102.4	52.2	52.0				6.00/16		3-	Pu		4					H	
410 SA	12-3.46x2.68	335-6000	302.3	9.00	V	IH	AA	Ch	110.4	57.3	57.1	149.7	67.0	67.0	6.50/16	abc	3-Dt	Pu	HS	4	Wo	(15)		Fr	MH	2420
735 Sport	6-4.02x3.54	355-6000	268.8	9.00	IL	IH	AA	Ch	92.6	50.3	50.6	132.0	51.5	49.3	(16)	abc	3-Dt	Pu	HS	5	Wo	Var		Fr	MH	1948
Fiat 1100 (103)	4-2.68x2.95	36-4400	66.4	6.70	IL	IH	AA	Ch	92.1	48.4	47.7	148.6	57.4	58.5	5.20/14	abce	1-SD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1740
1100TV	4-2.68x2.95	50-5200	66.4	7.60	IL	IH	AA	Ch	92.1	48.4	47.7	148.6	57.4	58.5	5.20/14	abce	1-DD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1795
1400A	4-3.23x2.80	50-4600	85.1	7.00	IL	IH	AA	Ch	104.3	52.2	52.0	169.5	65.2	62.0	5.90/14	abce	1-DD	Pu	HS	4	Hy	4.44	TA	Fr	H	2380
1400A Diesel	4-3.23x3.54	40-3200	116.0	20.00	IL	IH	AA	HG	104.3	52.4	52.2	169.5	65.2	62.6	6.40/14	abce	Inj	Pu	HS	4	Hy	4.10	TA	Fr	H	2616
1900A	4-3.23x3.54	70-4000	116.0	7.50	IL	IH	AA	Ch	104.3	52.4	52.2	169.5	65.2	62.6	6.40/14	abce	1-DD	Pu	HS	5	Hy	4.30	TA	Fr	H	2544
1100 Family Car	4-2.68x2.95	36-4400	66.4	6.70	IL	IH	AA	Ch	92.1	48.4	47.7	147.4	57.4	58.8	5.60/14	abce	1-SD	Pu	HS	4	Hy	4.30	Sp	Fr	H	1861
600	4-2.36x2.20	22-4600	38.6	7.00	IL	IH	AA	Ch	78.7	45.2	45.4	126.6	54.3	55.3	5.20/12	abce	1-SD	Pu	HS	4	SB	5.38		FR	H	1234
Iso Isetta	1-1.89x2.60	10-4500	7.3	6.50	IL	N	AA	N	59.1	47.2	19.7	88.6	52.8	52.0	4.50/10	N	1-St	AC	HS	4	Ch		Sp	Fr	H	728
Lancia C10 Appia	4-2.68x2.95	38-4800	66.5	7.40	V	IH	AA	Ch	97.6	46.4	46.5	152.7	55.9	56.0	5.60/15	abce	1-St	Pu	HS	4	Hy	5.22		Fr	H	1808
Aurelia	6-2.95x3.37	87-4300	138.2	7.40	V	IH	AA	Ch	112.2	49.2	51.2	176.6	61.4	69.3	6.50/15	abce	1-Dt	Pu	HS	4	SB	4.45		Fr	H	2646
Aurelia GT2500	6-3.07x3.37	118-5000	149.9	8.00	V	IH	AA	Ch	103.3	49.2	51.2	172.0	61.0	53.5	6.50/15	abce	1-Dt	Pu	HS	4	SB	4.27		Fr	H	2535
Spider Aurelia GT2500	6-3.07x3.36	110-5100	149.4	8.00	V	IH	AA	Ch	96.4	50.8	48.2	165.3	61.2		6.50/15	abce	1-DD	Pu	HS	4	SB	4.27	TTs	Fr	H	2330
Maserati A6G/2000	6-3.01x2.83	125-6000	121.0	8.50	IL	IH	AA	Ch	100.4	52.6	48.0	155.0	60.0	51.0	6.00/16	abce	3-	Pu	Pr	4	SB	4.75		Fr	H	2100
A6GCS	6-3.01x2.83	170-7200	121.0	8.75	IL	IH	AA	SG	90.9	52.6	48.0	150.0	60.0	31.0	6.00/16	abc	3-Dt	Pu	Pr	4	SB	Var		Fr	H	1650
250/F	6-3.31x2.95	250-7200	152.1	12.00	IL	IH	AA	HG	89.0	51.2	49.2	156.0	55.0	39.0	(8)	abc	3-Dt	Pu	Pr	5	SbR	Var		Fr	H	1400
150/S	4-3.11x2.76	130-7500	90.5	8.75	IL	IH	AA	HG	86.7	49.3	47.3	145.0	57.0	30.0	(7)	abcde	2-Dt	Pu	Pr	4	Hy	Var	TT	FR	H	1340
300/S	6-3.31x3.54	250-6200	82.5	8.75	IL	IH	AA	HG	91.0	51.3	49.3	151.0	59.0	33.0	(17)	abcde	3-Dt	Pu	Pr	4	DR	Var	TT	FR	H	1600
O.S.C.A. 1100/2AD	4-2.76x2.80	92-6600	66.6	9.00	IL	IH	AA	Ch	86.6	47.2	45.3	140.0	57.0	41.0	5.00/15	abc	2-	Pu	HS	4	SB	Var		Fr	H	1609
1500/2AD	4-3.07x3.07	125-6300	90.9	9.50	IL	IH	AA	HG	86.6	47.2	45.3	140.0	57.0	41.0	(9)	abc	2-	Pu	HS	4	SB	Var		Fr	H	1653
2000S	6-2.99x2.87	165-6500	121.2	9.00	IL	IH	AA	Ch	88.6	49.6	47.6	149.0	58.0	39.5	(6)	abc	3-	Pu	HS	4	SB	Var		FR	H	1918
JAPAN																											
Nissan Datsun 110	4-2.36x2.99	25-4000	52.5	6.50	IL	L	AA	HG	87.4	46.6	46.5	152.0	57.7	60.6	5.00/15	ce	1-SD	Pu	HS	4	Hy	6.43	Sp	N	H	1896
112	4-2.36x2.99	24-4000	52.5	6.50	IL	L	AA	HG	86.6	48.6	46.5	152.0	57.7	60.6	5.00/15	ce	1-SD	Pu	HS	4	Hy	6.43	Sp	N	H	1892
Ohta PK-1	4-2.42x2.99	24-4000	55.1	6.50	IL	L	AA	HG	84.6	45.7	45.3	153.0	59.0	61.0	5.50/15	abce	1-Do	Pu	HS	3	SB	6.83	Sp	N	H	2106
Toyopet Master RR	4-3.03x3.07	48-4000	88.5	6.80	IL	IH	AA	HG	99.6	51.9	53.9	168.3	65.8	61.0	6.00/16	abce	1-SD	Pu	HS	3	Hy	5.29	Sp	N	H	2530
Crown RS	4-3.03x3.07	48-4000	88.5	6.80	IL	IH	AA	HG	99.6	52.2	53.9	168.7	66.1	60.0	6.40/15	abce	1-SD	Pu	HS	3	Hy	5.29	Sp	Fr	H	2530
SPAIN																											
Pegaso 102B/2.8	8-3.14x2.76	-6300	171.5	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.00/16	abc	(10)	Pu	HS	5	SB	Var	Sp	Fr	H	2183
102BS/2.8	8-3.14x2.76	250-6600	171.5	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	1-DH	Pu	HS	5	SB	Var	Sp	Fr	H	2340
102B/3.2	8-3.35x2.72	200-6000	193.9	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	2-FB	Pu	HS	5	SB	Var	Sp	Fr	H	2183
102BSS/3.2	8-3.35x2.72	370-6000	193.9	Var	V	IH	AA	HG	92.0	52.0	50.8	162.0	63.0	51.0	6.50/16	abc	4-DH	Pu	HS	5	SB	Var	Sp	Fr	H	2340
Z-103	8-3.46x3.25	270-5800	244.7	8.00	V	IH	AA	Ch	92.2	52.8	50.8	162.0	63.0	50.8	6.30/28	abc	(16)	Pu	HS	5	SB	3.58		Fr	H	3190
SWEDEN																											
SAAB 92B	2-3.15x2.99	28-4000	46.6	6.60	IL	N	AA	N	97.2	46.4	46.4	155.5	53.7	57.0	5.00/15	N	1-SD	TS	HS	3	HG	5.35		FR	H	1725
93	3-2.60x2.88	38-5000	45.6	7.30	IL	N	AA	N	98.4	48.0	48.0	157.1	61.5	57.1	5.00/15	N	1-St		HS	3	HG	5.13		FR	H	1734
Volvo PV-444-H	4-3.95x3.15	48-4500	86.0	7.30	IL	IH	AA	HG	102.3	51.0	51.8	177.0	62.0	62.0	5.90/15	abc	1-SD	Pu	HS	3	Hy	4.56	TA	Fr	H	2060
PV-445-DH	4-3.95x3.15	48-4500	86.0	7.30	IL	IH	AA	HG	102.3	51.0	51.8	174.0	63.0	66.0	6.00/15	abc	1-SD	Pu	HS	3	Hy	5.63	Sp	Fr	H	2270
B-14-A	4-3.95x3.15	70-5500	86.0	7.80	IL	IH	AA	HG	94.5	51.0	51.8	167.5	62.0	53.0	5.90/15	abc	2-SU	Pu	HS	3	Hy	4.56	TA	Fr	H	2000

ABBREVIATIONS

•—Four barrel carburetor optional.
▪—Front wheel drive.
■—Mechanical or hydraulic.
†—Alternate engine, transmission and rear axle available.
(1)—Fully automatic, preselective or hand shift optional.
(2)—One downdraft or one horizontal with supercharger.
(3)—3.90 with std. trans. and 4.22 with overdrive.
(4)—5.90 or 6.10/15.
(5)—Front, 6.00/16; rear, 7.50/16.
(6)—Front, 5.25/16; rear, 6.00/16.
(7)—Front, 5.25/16; rear, 5.50/16.
(8)—Front, 5.50/16; rear, 7.00/16.
(9)—Front, 5.25/15; rear, 5.90/15.
(10)—One or four dual downdrafts.
(11)—Varies with different body styles.
(12)—Front, 6.50/15; rear, 6.00/15.
(13)—Front, 5.00/16; rear, 5.25/16.
(14)—4.23, 4.38 or 4.86 available.
(15)—Three optional gear ratios available.
(16)—Front, 6.50/16; rear, 7.00/16.
(17)—Front, 6.00/16; rear, 6.50/16.
(18)—One dual downdraft or two four barrel.
a—Main bearings.
b—Connecting rod bearings.
c—Camshaft bearings.
d—Piston pins.
e—Timing chain or gears.
AA—Aluminum alloy.
AC—Air cooled.
AS—Aluminum alloy and steel strut.
AT—Alloy tinplated.
Au—Automatic.
BG—Bevel gear.
CC—Crankcase. **Ch**—Chain
CH—Chain and helical gear.
DD—Dual downdraft.
DF—Downdraft, four barrel.
DH—Dual horizontal.
Do—Downdraft.
DR—Double reduction.
Dt—Dual throat.
F—Valves in side and head.
FB—Four barrel.
Fr—Front.
FR—Front and rear.
H—Hydraulic.
HA—Hand shift or automatic.
HG—Helical gear.
HM—Front, hydraulic; rear, mechanical.
Ho—Horizontal.
HO—Horizontally opposed.
HS—Hand shift.
Hy—Hypoid.
IH—In head. **IL**—In line.
Inj—Injectors.
L—Valves at side.
M—Mechanical.
MH—Mechanical and hydraulic.
N—No or none.
NA—Not available.
Pr—Preselective.
Pu—Pump.
RA—Radius arms.
SB—Spiral bevel.
SbH—Spiral bevel or hypoid.
SbR—Straight bevel, double reduction.
Sd—Semi-downdraft.
SD—Single throat downdraft.
SDR—Spiral bevel, double reduction.
SG—Spur gear.
SH—Single throat, horizontal.
Sp—Springs.
SSd—Single throat, semi-downdraft.
St—Single throat.
StB—Straight bevel.
SU—Single throat, updraft.
T—"T" head, valves opposite.
TA—Torque arm.
TaS—Torque arms and springs.
TF—Torque forks.
TP—Thermo-syphon and pump.
TS—Thermo-syphon.
TT—Torque tube.
TTs—Torque tube and springs.
V—"V" type.
Var—Various.
VS—Vertical shaft.
Wo—Worm.

For Directory of Car Manufacturers listed above, see page 286



★ ★ ★ ★ ★

SPECIFICATIONS

KEY TO DEFINITIONS

MAKE AND MODEL

Only Domestic Truck Models are listed.

OPTIONAL UNITS

For the express purpose of best fitting the truck to the individual job most of the models listed can be provided with optional engines, transmissions, axles, etc., and these models when so equipped are considered standard stock models.

CHASSIS LIST PRICE

The chassis list price applies to the minimum standard wheelbase with standard tires and standard equipment. All prices are F.O.B. factory. Chassis list price does not include the price of the Cab unless otherwise noted.

RECOMMENDED GROSS VEHICLE WEIGHT FOR NORMAL SERVICE

The Gross Weights published herewith are those supplied by manufacturers as their Recommended Gross Vehicle Weights for Normal Operating Conditions, and are based upon the Maximum Authorized Tire Size listed. In actual practice the manufacturer may either increase or decrease the gross vehicle weight rating when either favorable or unfavorable operating conditions are involved. Since the proper performance of a motor truck depends upon many factors, including grades, road conditions, etc., the gross weights that a manufacturer is prepared to recommend will vary with particular conditions, and the manufacturer's own standard of safety factors. Specific recommendations, therefore, should be obtained from the manufacturer's representative.

CHASSIS WEIGHT

The chassis weight listed includes the weight of the minimum standard wheelbase chassis, with cowl, with standard tires, with standard equipment, with crankcase and cooling system full, and 5 gallons of fuel in the tank. It does not include the weight of the Cab. This applies to C.O.E. as well as conventional chassis types. Exceptions are noted.

STANDARD TIRE SIZE

The standard tire size listed is that which is included in the Chassis List Price.

MAXIMUM AUTHORIZED TIRE SIZE

The tire size listed in this column is the maximum size recommended by the manufacturer of the chassis for the Gross Vehicle Weight for Normal Operating Conditions. It is furnished at extra cost. If it differs from the standard size. Dual rears are understood; exceptions noted

MINIMUM STANDARD WHEELBASE

The minimum standard wheelbase is the so-called standard wheelbase on which the Chassis List Price is based.

MAXIMUM STANDARD WHEELBASE

The maximum standard wheelbase is the extreme end of the standard range of wheelbases offered by the chassis maker.

MAXIMUM BRAKE HP.

Maximum Brake Horsepower at Given R.P.M. is actual dynamometer reading without accessories.

GEAR RATIO RANGE

Gear Ratio Range in High—Ratios within the range given are available at no extra cost. Exceptions are noted.

TRACTORS

Unless given the designation (N)—meaning not available as a tractor—all standard models may be assumed to be available as tractors. Exclusively Tractor models are designated (T).

KEY TO ABBREVIATIONS

MAKES—ALL
BC—Brockway Continental.
BL—Brown-Lipe.
Bu or Bud—Buda.
Chev—Chevrolet.
Cl or Cla—Clark.
Con—Continental.
Cum—Cummins-Diesel.
DC—Diamond T Continental.
Eat—Eaton.
Fu—Fuller.
GMC—General Motors.
Her—Hercules.
HS—Hall-Scott.
Int.—International.
LeR—Le Roi.
N.P.—New Process.
O or Ow—Own.
Op or Opt—Optional.
Spi—Spicer.
T or Tim—Timken-Detroit Axle Co.
WG—Warner Gear.
Wau—Waukesha.
Wh—White.

REAR AXLE
Final Drive and Type
B—Bevel.
CD—Chain Drive.
F—Full-floating.
H or Hy—Hypoid.
d—Dual range axle.
2—Double Reduction.
S—Spiral bevel.
W—Worm.
½—Semi-Floating.

REAR RATIOS
(**)—Only one ratio.

DRIVE AND TORQUE
H—Hotchkiss (springs).
R—Radius Rods.
L—Parallel Torque Rods.

KEY TO REFERENCES

c.f.—Cab Forward design.
c.o.e.—Cab-Over-Engine design.
(D)—Diesel-engine equipped.
(T)—Designed for tractor use only.
(C)—Ford or Chevrolet Models.
(R)—Remanufactured Fords.
ᴬ—Denotes "Includes Cab" when used with weights or prices.

AUTOCAR
†—Auxiliary transmission standard equipment.
*—Front only; rear, 14.00/24.

AVAILABLE
*—Conventional or C.O.E. available.
•—Two or three speed auxiliary transmission available.
ᴬ—Two speed rear axle available.

BROCKWAY
†—Auxiliary transmission Fuller 3A65.

CHEVROLET
ᵛ—Includes spare tire, full fuel tank and cooling system.
■—9/22.5 front tires are required when 10/22.5 dual rears are used.
ǂ—Trademaster V-8 engine available.
ᵛᵛ—Thriftmaster Heavy-Duty engine available.
††—Turbo-Fire 162, 170, 205 engines available.
ǂǂ—Taskmaster V-8 engine available.
**—5-speed transmission available.
ᵛᵛ—Powermatic available.
ᴬᴬ—"Jobmaster" engine optional.
¶—Overdrive optional.
ǂ—8/22.5 front tires are required when 9/22.5 rear tires are used.
•—17000 Max. GVW when 8.00/22.5 front tires and 9/22.5 dual rears are used.
□—10.00/22.5 front tires required when 11.00/25.5 dual rears are used.
°°—7.17 available.
‡—7.17 SF available.
ᴬ—22000 GVW when 8.00/22 front and dual rears are used.
◉—Turbo-Fire V8 opt.
§—Synchro-mesh 3-speed H.D. optional.
ǂ—4-speed synchro-mesh transmission optional.
**—4.11 available with optional overdrive; 3.55 available with optional powerglide.
ǂ—7.20 available.
□□—Two-speed rear axle available.
ǂ—Hydramatic available.
‡—4.11 available with optional overdrive.
(f.c.c.)—Forward Control Chassis.
(l.c.f.)—Low cab forward.
(h.d.t.)—Heavy Duty Tandem.

COLEMAN
*—11.00/22 or 12.00/22 also available.
■—Fu5A65 also available.

DIAMOND T
•—16100 to 19000.
ᴬ—16500 to 21000.
ǂ—24500 to 29500.
□—26500 to 31500.
§—21000 to 25000.
‡—25000 to 29500.
ᵛ—50000 to 60000.
**—17000 to 20000.
††—17500 to 22000.
●●—17000 to 23000.
ᴬᴬ—17700 to 25000.
ᴬᴬ—18000 to 30000.
§§—30000 to 36000.
♦♦—23000 to 26000.
ǂǂ—26000 to 30000.
(a)—29500 to 34000.
(b)—32000 to 36000.
(c)—34000 to 40000.
(d)—40000 to 47000.

DIVCO
†—Front 6.50/20. Rear 7.50/20.
††—Front 7.00/16. Rear 7.50/16.
‡—Front 7.50/16. Rear 8.25/16.

DODGE
ᴬ—Front only; Rear 7.00/16S.
*—Front only; Rear 8.25/16S.
¶—Front only; Rear 7.50/20.
ǂ—Front only; Rear 9.00/20.
†—Front only; Rear 10.00/20.
■—Front only; Rear 8.25/20.
•—Two speed rear axle available.
‡—Overdrive available.

DUPLEX
§—Torque Divider, Timken T70-2 speed.

FABCO
*—With 2-speed transfer case.
RC—Chevrolet axle remanufactured.
RF—Ford axle remanufactured.

FORD
ᴬ—Courier 176-hp engine with Fordomatic.
††—F-350, 9800 lbs. G.V.W. with dual wheels.
■—F-600, C-600, B-600, 158-hp, and 168-hp (governed) H.D. Power King engines also available.
ǂ—F-700, C-700, B-700, 168-hp Power King engine also available.
*—T-700, 302 cubic inch Cargo King engine also available.
ǂ—F-750, C-750, 186-hp Cargo King engine also available.
•—F-800, C-800, F-900, C-900, 200-hp Cargo King engine also available.
**—F-700, F-750, B-700, B-750, C-700, C-750, only one ratio available.

KENWORTH
ǂǂ—Timken T13129 PA Trailing Axle.
†—14.00/24, front; 16.00/24, rear.
•—C.O.E. optional.
*—One man cab.
ᴬ—Torque converter plus Torquematic transmission optional.
■—Cab beside engine optional.
ǂ—Both C.O.E. and cab beside engine optional.
††—14.00/24 front; 18.00/25 rear.
**—Cummins NHRBSID 600.
‡‡—Allison TCL 654 plus TG 607.

NAPCO
*—NAPCO—Federal Truck Div., Northwestern Auto Parts Company (Chevrolet 4-wheel drive conversion).
ǂǂ—See same footnote under Chevrolet.

OSHKOSH
ᴬ—Includes cab.
■—1091 cu. in.
°°—Hydraulic coupling optional.
ᴬ—Dependent upon engine.

REO
ǂ—Model 331-OA and 331-OA LPG engines can be furnished.
ǂ—Two speed axle available.
‡—Model 255-OA-LPG or 292-OA engine can be furnished.
†—Front only; Rear 10.00/20.
‡—OH-160 or OH-160 LPG engine can be furnished.
■—OH-160 LPG engine can be furnished.
ᵛ—Model OV-220 engine can be furnished.
ᴬ—Model OV-225 engine can be furnished.
::—Model SQW tandem axle can be furnished.

STUDEBAKER
•—Two speed 5.93–8.10 or 6.48–8.86 optional.
‡—Front only; rear 8.25/20D.

TRUCKSTELL
ǂǂ—With 3 speed power divider.
ǂ—Weight with cab and maximum tires.

WARD LA FRANCE
‡—Available with optional rear axles.
ᴬᴬ—Available with 11.00/22 or 12.00/20 tires for G.V.W. of 60,000 lbs and optional front and rear axles.
ǂǂ—Auxiliary transmission, Fuller 3A65, 3B65, 3A92 and 3B92.

WILLYS
*—Complete vehicle-Pick-up Type body.
ǂ—Three speed transmission, 2 speed transfer case.

1956 TRUCK SPECIFICATIONS

MAKE AND MODEL	WHEEL-BASE				TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
					D-dual rear S-single rear													
	Minimum Standard	Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Autocar (T) C65T	142	158	60000	^9840	10.00/20	11.00/22	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Fu 5C720	5	Own FT	2S	F	5.64-10.05
C65D	146	170	32000	^10700	10.00/20	11.00/22	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Fu 5C720	5	Own TK	2S	F	5.64-9.30
C87D-OH	158	170	46000	^12900	11.00/22	12.00/24	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Fu 5C720	5	Own G	2S	F	5.34-10.40
(T)(D) DC65T	142	158	55000	^10'00	10.00/20	11.00/22	Cum JT	6-4-1/4x5	401	15.8	406	175-2500	Fu 5C720	5	Own FT†	2S	F	5.64-10.05
(T)(D) DC74T	159	175	60000	^12000	10.00/20	11.00/22	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Fu 5C720	5	Own FT†	2S	F	5.64-10.05
(T)(D) DC75T	141	157	60000	^12080	10.00/20	11.00/22	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Fu 5C720	5	Own FT†	2S	F	5.64-10.05
(T)(D) DCU75T	131	147	60000	^12400	10.00/20	11.00/22	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Fu 10B1120	10	Own FT	2S	F	5.64-10.05
(D) DC102	175	223	36000	^13500	10.00/20	11.00/24	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Sp 8041†	4	Own TK	2S	F	5.64-9.30
(T)(D) DC102T	159	175	76800	^13200	10.00/20	11.00/24	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Sp 8041†	4	Own TK	2S	F	5.64-9.30
(T)(D) DC103T	141	157	70000	^13300	10.00/20	11.00/24	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Sp 8041†	4	Own TK	2S	F	5.64-9.30
(D) DC87D-OH	141	169	46000	^13800	11.00/22	12.00/24	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Fu 5C720†	5	Own G	2S	F	5.34-10.40
(D) DC103D-OH	169	169	54000	^17100	12.00/24	14.00/24°	Cum HRB	6-5-1/4x6	743	15.5	537	165-1800	Sp 8041†	4	Tim 79746	2S	F	7.09-9.47
Available *200	Opt	Opt	16500	^5700	7.00/20D	8.25/20	Wau 195GL	6-3⅝x4	265	6.2	220	78-2800	Fu 5A33•	5	Tim E100DH△	HF	H	•• -6.20
*225	Opt	Opt	17500	^6400	7.50/20D	8.25/20	Wau 195GK	6-4-1/4x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim E100DH△	HF	H	•• -6.20
*250	Opt	Opt	20000	^6600	8.25/20D	9.00/20	Wau 195GK	6-4-1/4x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim H100DH△	HF	R	•• -6.17
*400	Opt	Opt	23000	^7000	9.00/20D	10.00/20	Wau 195GK	6-4-1/4x4	320	6.2	245	103-2800	Fu 5A33•	5	Tim L100DH△	HF	R	•• -6.17
*500	Opt	Opt	24000	^7700	9.00/20D	10.00/20	Wau 135GK	6-4-1/4x5	426	6.3	330	150-2800	Fu 5A43•	5	Tim L100DH△	HF	R	•• -6.17
*550	Opt	Opt	26000	^8300	10.00/20D	11.00/20	Wau 135GK	6-4-1/4x5	426	6.3	330	150-2800	Fu 5A42•	5	Tim Q100DH△	HF	R	•• -6.17
*560	Opt	Opt	27000	^9800	10.00/20D	11.00/24	Wau 135GZ	6-4⅝x5	451	6.3	350	155-2800	Fu 5A62••	5	Tim R100DH△	HF	R	•• -6.83
*600	Opt	Opt	28000	^10200	10.00/20D	11.00/24	Wau 140GK	6-4-1/8x5½	525	6.4	405	188-2800	Fu 5A85•	5	Tim R100P△	HF	R	•• -6.83
*610	Opt	Opt	29000	^10900	10.00/20D	11.00/24	Wau 145GK	6-5-1/4x6	779	6.2	600	230-2200	Spi 8051A•	5	Tim R100P△	HF	R	•• -6.83
(D) *620	Opt	Opt	29000	^11200	10.00/20D	11.00/24	Cum NHB	6-5-1/4x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim R100P△	HF	R	•• -5.29
(D) *630	Opt	Opt	40000	^11900	12.00/20D	12.00/24	Cum NHB	6-5-1/4x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim U200P△	2F	R	•• -7.03
Biederman NSH	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6-4x4½	339	6.9	272	131-3200	Fu 5A330	5	Tim H100DPH	SF	H	•• -7.2
NSD	130	190	21000	6070	8.25/20D	10.00/20	Her JXLD	6-4x4½	339	6.9	272	131-3200	Fu 5A330	5	Tim H300DPH	2D	H	6.67-9.44
NSR	142	171	21000	7420	8.25/20D	10.00/20	Her JXLD	6-4x4½	339	6.9	272	131-3200	Spi 3511UP	5	Tim H110DPH	HFd	H	•• -6.4
HL	93	197	30000	12200	10.00/24D	12.00/24	Wau 140GK	6-4-1/8x5½	525	6.4	425	172-2600	Spi 6252A	5	Tim R200	HFd	H	6.41-8.37
CH	137	190	26000	7800	9.00/20D	10.00/20	Con T6427	6-4⅞x4⅞	427	6.4	350	170-3000	Fu 5A620	5	Tim QT300	2D	H	6.36-8.61
Brockway 88WHX	156	193	17000	5900	8.25/20	8.25/20	BC 388	6-3⅝x4½	290	6.3	212	104-3200	Fuller	5		HF	H	5.83-6.80
128WX	135	193	23000	6700	9.00/20	9.00/20	BC 408	6-4x4½	330	6.7	258	125-3000	Fuller	5		HF	R	6.80-7.20
147WL	135	205	28000	7400	9.00/20	10.00/20	BC 418D	6-4x4½	363	6.7	293	150-3200	Fuller	5		HF	R	6.17-7.80
148WD	135	205	30000	8300	10.00/20	11.00/20	BC 428D	6-4⅞x4½	427	6.5	352	165-3000	Fuller	5		HF	R	6.17-7.80
153WD	141	221	36000	9400	11.00/20	11.00/22	BC 428D	6-4⅞x4½	427	6.5	352	165-3000	Fuller	5		2F	R	5.91-7.79
260LD	141	209	38000	11000	11.00/22	12.00/24	BC 468D	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	R	6.38-7.79
260WLD	141	209	38000	11100	11.00/22	12.00/24	BC 488D	6-4⅝x5½	572	6.3	484	230-2800	Fuller	5		2F	R	6.38-7.79
(T) 147W	135	156	45000	7100	9.00/20	10.00/20	BC 418D	6-4x4½	363	6.7	293	150-3200	Fuller	5		HF	H	5.29-7.80
(T) 155W	135	156	55000	8000	10.00/20	11.00/20	BC 428D	6-4⅞x4½	427	6.5	352	165-3000	Fuller	5		2F	H	5.43-6.71
(T) 254W	144	163	60000	9450	10.00/22	11.00/22	BC 468D	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	H	5.43-6.71
(T) 255W	144	163	65000	9700	11.00/22	11.00/22	BC 488D	6-4⅝x5½	572	6.3	484	230-2800	Fuller	5		2F	H	5.54-7.09
(T) 256W	137	158	60000	9500	10.00/22	11.00/22	BC 46FD	6-4½x5½	513	6.2	412	200-2800	Fuller	5		2F	H	5.43-6.71
(T) 258W	137	158	65000	9750	11.00/22	11.00/22	BC 48FD	6-4⅝x5½	572	6.3	484	230-2800	Fuller	5		2F	H	4.77-7.09
(T) 260WD	141	161	65000	10500	11.00/22	11.00/24	BC 488D	6-4⅝x5½	572	6.3	484	230-2800	Fuller	5		2F	R	6.16-6.71
Chevrolet D-56	115	...	4101	▼3311	6.70/15S	6.70/15S	O-Bl. Fl. 140†‡	6-3½x3½	236	8.0	210	140-4200	Own ‡ ¶	3	Own	H½	H	•• -3.70
3A56	114	...	5000	▼2479	6.70/15S	7/18.5S	O-Th. Mas.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢† ¶	3	Own	H½	H	‡ -3.90
3B56	123	...	5000	▼▲3148	6.70/15S	7/18.5S	O-Th. Mas.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢† ¶	3	Own	H½	H	‡ -3.90
(f.c.c.) 3C56	104	...	10000	▼2707	8/20.5S	8/20.5	O-Th. Mas. So.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢†	3	Own	HF	H	... -5.14
(f.c.c.) 3D56	125	...	10000	▼2763	8/20.5S	8/20.5	O-Th. Mas. So.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢†	3	Own	HF	H	... -5.14
(f.c.c.) 3F56	137	...	10000	▼2793	8/20.5S	8/20.5	O-Th. Mas. So.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢†	3	Own	HF	H	... -5.14
3E56	123	...	6900	▼2883	7/18.5S	8/20.5S△	O-Th. Mas.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢†	3	Own	HF	H	... -4.57
3G56	135	...	8800	▼3137	8/18.5S	8/20.5	O-Th. Mas.‡	6-3½x3½	236	8.0	210	140-4200	Own ‡¢†	4	Own	HF	H	... -5.14
4A56	130	...	14000	▼39'0	7/22.5D	8/22.5△△	O-Th. Mas.‡▽◆◆	6-3½x3½	236	8.0	210	140-4200	Own ♦	4	Own	HF	H	□□ -6.17
4B56	154	...	1400	▼4071	7/22.5D	8/22.5△△	O-Th. Mas.‡▽◆◆	6-3½x3½	236	8.0	210	140-4200	Own ♦	4	Own	HF	H	□□ -6.17
(l.c.f.) 5D56	112	...	15000	▼▲4961	8/22.5D	9/22.5◆	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(l.c.f.) 5E56	136	...	15000	▼▲5081	8/22.5D	9/22.5◆	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(l.c.f.) 5F56	160	...	15000	▼▲5161	8/22.5D	9/22.5◆	O-Tak. Mas.	8-3⅝x3	256	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6F56	130	...	15000	▼4329	8/22.5D	9/22.5◆	O-T. M. HD^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6G56	154	...	15000	▼4393	8/22.5D	9/22.5◆	O-T. M. HD^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6H56	172	...	15000	▼4488	8/22.5D	9/22.5◆	O-T. M. HD^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(l.c.f.) 5A56	112	...	19500	▼▲4961	8/22.5D	10/22.5■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(l.c.f.) 5B56	136	...	19500	▼▲5081	8/22.5D	10/22.5■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(l.c.f.) 5C56	160	...	19500	▼▲5161	8/22.5D	10/22.5■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6A56	130	...	19500	▼4329	8/22.5D	10/22.5■	O-Th. Mas.^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6B56	154	...	19500	▼4393	8/22.5D	10/22.5■	O-T. M. HD^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
6C56	172	...	19500	▼4488	8/22.5D	10/22.5■	O-T. M. HD^^◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††▽▽	4	Own	HF	H	□□/- 6.17
(Sc. Bus Ch.) 4C56	154	...	12000	▼4278	7/22.5D	8/22.5	O-Th. Mas.‡▽◆◆	6-3½x3½	236	8.0	210	140-4200	Own	4	Own	HF	H	... -6.17
(Sc. Bus Ch.) 6D56	194	...	16000	▼4812	8/22.5D	9/22.5	O-T. M. HD‡◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††	4	Own	HF	H	□□/- 6.17
(Sc. Bus Ch.) 6E56	220	...	16000	▼4887	8/22.5D	9/22.5	O-T. M. HD‡◆◆	6-3½x3½	236	8.0	210	140-4200	Own ††	4	Own	HF	H	□□/- 6.17
(Sc. Bus Ch.) 8F56	240	...	19500	▼5612	10/22.5D	10/22.5	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ••	4	Own	HF	H	/ -6.17
(Sc. Bus Ch.) 10F56	240	...	22000	▼5962	10/22.5D	10/22.5	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi	5	Own	HF	H	•• -6.17
(l.c.f.) 7A56	113	...	21000	▼5488	8/22.5D	10/22.5	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□ -6.17
(l.c.f.) 7B56	124	...	21000	▼5532	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
(l.c.f.) 7C56	173	...	21000	▼5718	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
8A56	132	...	21000	▼▲5447	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
8B56	144	...	21000	▼▲5495	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
8C56	156	...	21000	▼▲5560	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
8D56	174	...	21000	▼▲5644	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
8E56	192	...	21000	▼▲5752	8/22.5D	10/22.5■■	O-Tak. Mas.	8-3⅝x3	265	7.5	249	155-4200	Own ▽▽	4	Own	HF	H	□□▽▽-6.17
(l.c.f.) 9A56	113	...	25000	▼▲6130	9/22.5D	10/22.5■■	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
(l.c.f.) 9B56	125	...	25000	▼▲6173	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
(l.c.f.) 9C56	173	...	25000	▼▲6369	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
10A56	132	...	25000	▼▲6111	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
10B56	144	...	25000	▼▲6161	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
10C56	156	...	25000	▼▲6221	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
10D56	174	...	25000	▼▲6306	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□-6.17
10E56	192	...	25000	▼▲6416	9/22.5D	11/22.5■□	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□◆-6.17
(h.d.t.) 10C56	156	...	32000	▼▲6185	8/22.5D	11/22.5■■	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□ -6.17
(h.d.t.) 10D56	174	...	32000	▼▲6263	8/22.5D	10/22.5■■	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□ -6.17
(h.d.t.) 10E56	192	...	32000	▼▲6341	8/22.5D	10/22.5■■	O-Lo. Mas.	8-4x3½	322	7.7	310	195-4000	Spi ▽▽	5	Own	HF	H	□□ -6.17

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEELBASE Minimum Standard	WHEELBASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear) Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Diamond T 323C	99	159	•	6100	6.00/20	8.25/20	Own 252	6-3 1/2x4 1/2	252	7.2	216	113-3600	WG T98	4	Tim E100	HF	R	6.2-7.2
422	130	250	•	5800	6.00/20	9.00/22	Con K6271	6-3 1/2x4 1/2	271	6.5	216	112-3000	WG T98	4	Cla R1000	HF	H	5.57-6.33
422C	99	159	••	6700	6.00/20	9.00/20	Con K6271	6-3 1/2x4 1/2	271	6.5	216	112-3000	WG T98	4	Tim E100	HF	R	6.2-7.2
522	130	250	▲	6100	7.00/20	9.00/20	Con K6330	6-4x4 1/2	330	6.5	266	141-3000	Cla 205V	5	Tim H100	HF	H	5.28-6.16
522C	99	159	††	7000	7.00/20	10.00/20	Con K6330	6-4x4 1/2	330	6.5	266	141-3000	Cla 205V	5	Tim H100	HF	R	5.28-6.16
(T) 532	133	157	18000	7400	9.00/20	10.00/22	Own XL372	6-4 1/2x4 1/2	372	6.5	308	155-2850	Cla 532-292VO	5	Tim H100	HF	H	5.28-6.83
622	130	250	▪▪	6800	7.50/20	10.00/20	Con K6363	6-4x4 1/2	363	6.5	288	150-3000	Cla 205VO	5	Eat 1790	SF	H	6.50-7.16
622C	99	159	▲▲	7500	7.50/20	10.00/20	Cob K6363	6-4x4 1/2	363	6.5	288	150-3000	Cla 205VO	5	Eat 1790	SF	R	6.50-7.16
(T) 630	133	211	‡	7700	10.00/20	11.00/20	Own XL406	6-4 5/8x4 1/2	406	6.5	338	164-2750	Cla 630-291V	5	Eat 1790	SF	H	6.5-7.16
630C	99	189	‡	7850	8.25/20	10.00/20	Own XL406	6-4 5/8x4 1/2	406		338	175-3200	Cla 291V	5	Eat 1790	SF	R	Opt
660	133	157	17700	8050	9.00/20	10.00/22	Con T6427	6-4 1/2x4 7/8	427	6.5	350	164-2700	Cla 290VO	5	Eat 1790	SF	R	6.50-7.16
(T) 662	133	157	22000	8500	10.00/20	11.00/20	Own XL450	6-4 5/8x5	451	6.5	388	174-2600	Cla 292VO	5	Eat 1793	SF	R	6.5-7.16
720	133	211	♦	9050	9.00/20	11.00/22	Con T6427	6-4 1/2x4 7/8	427	6.5	350	164-2700	Cla 290V	5	Eat 18803	SFd	R	
720C	99	159	▲▲	8500	9.00/20	11.00/20	Con T6427	6-4 1/2x4 7/8	427	6.5	350	164-2700	Cla 290V	5	Eat 18803	SFd	R	
(D) 723JT	133	211	‡	9800	9.00/20	11.00/22	Cum JT	6-4 1/2x5	401		405	175-2500	Fu 5A650	5	Eat 18803	2F	R	Opt
723CJT	111	189	‡	9450	9.00/20	11.00/20	Cum JT	6-4 1/2x5	401		405	175-2500	Fu 5A650	5	Eat 18803	2F	R	Opt
(D) 723	133	211	♦	9600	9.00/20	11.00/22	Cum JBS	6-4 1/2x5	401	15.5	360	150-2500	Cla 292VO	5	Eat 18803	SFd	R	
(T) (D) 723C	99	111	17700	9350	9.00/20	11.00/20	Cum JBS600	6-4 1/2x5	401	15.5	360	150-2500	Cla 292VO	5	Eat 18803	SFd	R	Opt
(T) 730	133	211	‡	8950	10.00/20	11.00/22	Own XL450	6-4 5/8x5	451	6.5	388	174-2600	Cla 292VO	5	Eat 18803	SFd	R	Opt
730C	99	189	‡	8000	10.00/20	11.00/20	Own XL450	6-4 5/8x5	451		388	182-3000	Cla 292VO	5	Eat 18803	2F	R	Opt
(T) 830	133	211	▲▲	9100	10.00/20	11.00/22	Own XL501	6-4 1/2x5 1/4	501	6.5	430	201-3000	Fu 5A650	5	Eat 18803	SFd	R	Opt
830C	99	189	▲▲	8700	10.00/20	11.00/20	Own XL501	6-4 1/2x5 1/4	501		444	212-3000	Fu 5A650	5	Eat 18803	2F	R	Opt
(D) 921CR	114	135	31500	11000	10.00/20	11.00/20	Cum HRFB600	6-5 1/2x6	743		502	180-2000	Fu 5C720	5	Eat 1911	SF	R	Opt
(D) 921	145	211	□	11100	9.00/20	11.00/22	Cum HB600	6-4 7/8x6	672	17.0	500	150-1800	Spi 6453	5	Eat 18803	HFd	R	
(D) 921BR	133	199	□	12400	9.00/20	11.00/22	Cum HRBB600	6-5 1/2x6	743	15.5	502	180-2000	Fu 10B1120	10	Tim R100	HF	R	4.11-6.83
(D) 921FN	147	213	□	12350	9.00/20	11.00/22	Cum NHB600	6-5 1/2x6	743	15.5	537	200-2100	Fu 10B1120	10	Tim R100	RF	R	4.11-6.83
(D) 950S	170	224	§§	14000	9.00/20	11.00/24	Cum NHBS600	6-5 1/2x6	743	13.5	710	275-2100	Fu 10B1120	10	Tim U200	2F	R	5.91-7.79
(D) 950RS	170	224	§§	14100	9.00/20	11.00/24	Cum NHRBS600	6-5 1/2x6	743	12.0	800	300-2100	Fu 10B1120	10	Tim U200	2F	R	5.91-7.79
(D) 951	170	224	§§	13900	9.00/20	11.00/24	Bud 6DA844	6-5 1/4x6 1/2	844	14.2	695	215-2100	Fu 10B1120	10	Tim U200	2F	R	5.91-7.79
(D) 951S	170	224	§§	14000	9.00/20	11.00/24	Bud 6DAS844	6-5 1/4x6 1/2	844	12.8	785	280-2100	Fu 10B1120	10	Tim U200	2F	R	5.91-7.79
Divco 11	101		7500	2525	7.00/16	7.50/16	Own	4-3 7/8x4 5/8	162	6.0		47-2800		4		F		
12	101		6000	2965	7.00/16	7.00/16	Own	4-3 7/8x4 5/8	162	6.0		47-2800		3		F		•• 6.6
13	101		7300	2940	7.00/16	7.50/16	Own	4-3 7/8x4 5/8	162	6.0		47-2800		4		F		•• 5.14
15	101		7600	2995	7.00/16	7.50/16	Own	6-3 1/8x4 1/8	230	6.5		75-2800		4		F		•• 5.14
334	115		10800		†	†	Own 6	6-3 1/8x4 1/8	230	6.5		75-2800	WG T9	4	Own	SF	H	•• 5.14
344	115		7500		††	††	Own 6	6-3 1/8x4 1/8	230	6.5		75-2800	WG T87	3	Own	HF	H	•• 5.57
364	115		6500		7.00/16	7.50/16	Own Super 4	4-3 7/8x4 5/8	162	6.2		55-2900	WG T87	3	Own	HF	H	•• 5.57
374	115		9500		‡	‡	Own 6	6-3 1/8x4 1/8	230	6.5		75-2800	WG T9	4	Own	SF	H	•• 5.14
214	127		12000		6.50/20	7.00/20	Own 6	6-3 1/8x4 1/8	230	6.5		75-2800	WG T9	4	Own	SF	H	•• 6.00
224	127		8000		††	7.50/16	Own 6	6-3 1/8x4 1/8	230	6.5		75-2800	WG T87	3	Own	SF	H	•• 5.14
244	127		7500			7.50/16	Own Super 4	4-3 7/8x4 5/8	162	6.2		55-2900	WG T87	3	Own	SF	H	•• 5.14
42	130		7000		7.50/16	7.50/16	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	•• 4.88
52	117		7000		7.50/16	7.50/16	Own Super 6	6-3 1/2x4 5/8	252	7.6	220	130-3700	WG T98	4	Own	HF	H	•• 4.88
Dodge C-3-BL6	108	108	4250	2100	6.70/15S	6.70/15S	Own TL-334	6-3 1/4x4 5/8	230	7.3	194	110-3600	Own PC	3	Own TL-334	H	H	3.73-4.78
C-3-B6	108	116	5100	2350	6.70/15S	7.10/15S	Own T-334	6-3 1/4x4 5/8	230	7.3	194	110-3600	Own PC‡	3	Own T-334	H	H	3.73-4.78
C-3-B8	108	116	5100	2450	6.70/15S	7.10/15S	Own VT-334	6-3 5/8x3 1/2	259	7.6	243	169-4400	Own PC‡	3	Own VT-334	H	H	3.73-4.78
C-3-C6	116	116	5800	2475	7.00/15S	7.00/15S	Own T-336	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 89905	3	Own T-336	H	H	4.1-4.78
C-3-C8	116	116	5800	2575	7.00/15S	7.00/15S	Own VT-336	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 89905	3	Own VT-336	H	H	4.1-4.78
C-3-D6	116	126	8800	2775	6.00/16S^	6.50/16	Own T-338	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 89970	3	Own T-338	HyF	H	4.1-4.89
C-3-D8	116	126	8800	2875	6.00/16S^	6.50/16	Own VT-338	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 89970	3	Own VT-338	HyF	H	4.1 -4.89
C-3-DU6	102	117	7900	4775	6.50/16S^	8.25/16S	Own T-164	6-3 1/4x4 5/8	230	7.3	191	103-3600	NP 88490	3	Own T-164	HyF	H	•• 4.89
C-3-EU6	142	142	10100	6000	7.50/16S*	9.00/16S	Own T-165	6-3 1/4x4 5/8	230	7.3	191	103-3600	NP 88500	4	Own T-165	HyF	H	•• 5.83
C-3-F6	129	153	14000	3600	6.50/20D	7.50/20	Own T-342	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 89960	4	Own T-342	HyF	H	5.63-6.83
C-3-F8	129	153	14000	3700	6.50/20D	7.50/20	Own VT-342	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 89960	4	Own VT-342	HyF	H	5.63-6.83
C-3-G6	129	171	15000	4025	6.50/20D ¶	8.25/20	Own TX-342	6-3 1/4x4 1/2	251	7.0	210	120-3600	NP 90360	4	Own TX-342•	HyF	H	6.29-6.83
C-3-G8	129	171	15000	5000	6.50/20D ¶	8.25/20	Own VTX-342	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 90410	4	Own VTX-342	HyF	H	6.29-6.83
C-3-H6	129	193	17000	4250	7.50/20D	9.00/20	Own T-344	6-3 1/4x4 1/2	251	7.0	210	120-3600	NP 89940	4	Own T-344•	HyF	H	6.29-6.83
C-3-H8	129	193	17000	4325	7.50/20D	9.00/20	Own VT-344	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 90240	4	Own VT-344•	HyF	H	6.29-6.83
C-3-HM6	108	162	17250	4300	7.50/20D	9.00/20	Own T-356	6-3 1/4x4 1/2	251	7.0	205	112-3600	NP 89980	4	Own T-356•	HyF	H	6.29-6.83
C-3-HH6	129	193	18000		7.50/20D■	9.00/20	Own TX-344	6-3 1/4x4 1/2	265	7.0	225	125-3600	NP 89940‡	4	Own TX-344•	HyF	H	6.29-6.83
C-3-HH8	129	193	18000		7.50/20D■	9.00/20	Own VTX-344	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 90240‡	4	Own VTX-344	HyF	H	6.29-6.83
C-3-HHM6	108	162	18250		7.50/20D■	9.00/20	Own TX-356	6-3 1/4x4 1/2	265	7.0	216	114-3600	NP 89980‡	4	Own TX-356•	HyF	H	6.29-6.83
C-3-J6	129	171	18000	4250	7.50/20D	9.00/20	Own T-346	6-3 1/4x4 1/2	265	7.0	225	125-3600	NP 90680‡	5	Own T-346•	HyF	H	6.29-6.83
C-3-J8	129	171	18000	4325	7.50/20D	9.00/20	Own VT-346	6-3 5/8x3 1/2	270	7.6	256	175-4400	NP 90730‡	5	Own VT-346•	HyF	H	6.29-6.83
C-3-JM6	108	162	18250	4750	7.50/20D	9.00/20	Own T-358	6-3 1/4x4 1/2	265	7.0	216	114-3600	NP 90720‡	5	Own T-358•	HyF	H	6.29-6.83
C-3-K6	129	171	19500	5075	8.25/20D▲	9.00/20	Own TX-346	6-3 1/4x4 1/2	265	7.0	225	125-3600	NP 90150‡	5	Tim H-101•	HyF	H	6.8-7.2
C-3-K8	129	171	19500	5150	8.25/20D▲	9.00/20	Own VTX-346	6-3 5/8x3 1/2	270	7.6	256	175-4400	NP 90370‡	5	Tim H-101	HyF	H	6.8-7.2
C-3-KMA6	108	162	19500	5275	8.25/20D▲	9.00/20	Own TX-358	6-3 1/4x4 1/2	265	7.0	216	114-3600	NP 90280	5	Eat 16500•	SFd	H	6.14-8.54
C-3-R8	132	174	21000	5275	7.50/20D■	10.00/20	Own VT-318	8-3 1/8x3 5/8	331	7.2	303	193-4000	NP 90040‡	5	Tim H-100•	HyF	H	6.8-7.2
C-3-T8	132	174	22500	5950	8.25/20D▲	10.00/20	Own VT-350	8-3 1/8x3 5/8	331	7.2	303	193-4000	NP 90030‡	5	Tim L-100•	HyF	H	6.8-7.2
C-3-V8	132	174	27500	6350	9.00/20D†	11.00/20	Own VTX-350	8-3 1/8x3 5/8	331	7.2	316	202-4000	NP 90030‡	5	Tim Q-100•	HyF	H	7.4-7.8
C-3-Y6	130	190	29000	7050	9.00/20D†	11.00/20	Own T-352	6-4 1/8x5 1/8	413	6.5	348	171-3200	Cla 290-V2‡	5	Tim Q-100•	HyF	H	6.8-7.4
(c.f.) C-3-CN6	116	116	6000	2325	7.00/15S	7.00/15S	Own T-361	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 90820	3	Own T-361	H	H	4.1 -4.78
(c.f.) C-3-DN6	116	126	9000	2550	7.00/16S	7.00/16	Own T-362	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 90820	3	Own T-362	HyF	H	4.1 -4.89
(c.f.) C-3-FN6	108	129	14500	3350	6.50/20S	7.50/20	Own T-364	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 89960	4	Own T-364	HyF	H	5.63-6.83
(Sc. Bus) C-3-FS6	153	153	12000	3975	6.50/20D	7.00/20	Own TS-342	6-3 1/4x4 5/8	230	7.3	194	110-3600	NP 89960	4	Own TS-342	HyF	H	5.63-6.83
(Sc. Bus) C-3-FS8	153	153	12000	4050	6.50/20D	7.00/20	Own VTS-342	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 89960	4	Own VTS-342	HyF	H	5.63-6.83
(Sc. Bus) C-3-HS6	193	193	16000	4700	7.50/20D	8.25/20	Own TS-344	6-3 1/4x4 1/2	251	7.0	210	120-3600	NP 89960	4	Own TS-344•	HyF	H	6.29-6.83
(Sc. Bus) C-3-HS8	193	193	16000	4775	7.50/20D	8.25/20	Own VTS-344	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 90240	4	Own VTS-344•	HyF	H	6.29-6.83
(Sc. Bus) C-3-HS6	217	217	17000	4925	7.50/20D	8.25/20	Own TS-344	6-3 1/4x4 1/2	251	7.0	210	120-3600	NP 90240	4	Own TS-344•	HyF	H	6.29-6.83
(Sc. Bus) C-3-HS8	217	217	17000	5000	7.50/20D	9.00/20	Own VTS-344	6-3 5/8x3 1/2	259	7.6	243	169-4400	NP 90240	4	Own VTS-344•	HyF	H	6.29-6.83
(Sc. Bus) C-3-JS6	217	217	17500	5075	7.50/20D	9.00/20	Own TS-346	6-3 1/4x4 1/2	265	7.0	225	125-3600	NP 90450	4	Own TS-346•	HyF	H	6.29-6.83
(Sc. Bus) C-3-JS8	217	217	17500	5150	7.50/20D	9.00/20	Own VTS-346	6-3 5/8x3 1/2	270	7.6	256	175-4400	NP 90450	4	Own VTS-346•	HyF	H	6.29-6.83
(Sc. Bus) C-3-RS8	239	239	21000	6250	7.50/20D	9.00/20	Own VTS-348	8-3 1/8x3 5/8	331	7.2	303	193-4000	NP 90040	5	Tim H-100•	HyF	H	6.8 -7.2
Duplex T	136	220	20000	6800	8.25/20D	9.00/20	Her JXD	6-4x4 1/2	320	6.2	240	113-3000	Fu 5B330	5	Tim H100	B	H	•• 7.20
TH-404	136	220	20000	6900	8.25/20D	9.00/20	Her WXLC-3	6-4 1/4x4 3/4	404	5.8	312	139-2600	Fu 5A430	5	Tim H-300	DF	H	6.13-8.15
R	136	220	28000	8820	9.00/20D	10.00/20	Her WXLC-3	6-4 1/4x4 3/4	404	5.8	312	139-2600	Fu 5A43	5	Tim Q300	DF	R	6.42-8.38
SH-829	172	208	28000	9500	10.00/20	11.00/20	Her RXC	6-4 5/8x5 1/4	529	5.4	395	132-2300	Fu 5A620		Tim Q200	2F	R	•• 7.77
L-6602	164	200	37000	11650	11.00/20D	11.00/20	Con R6602	6-4 7/8x5 3/4	602	6.1	465	200-2600	Fu 5C650	5	Tim U-200	DF	R	•• 9.83
KH	148	220	34000	10500	11.00/20D	11.00/20	Her RXC	6-4 5/8x5 1/4	529	5.4	395	132-2300	Fu 5A620	5	Tim U-200	2F	R	•• 9.83
LH	148	220	37000	11300	11.00/20D	11.00/20	Her RXLD	6-4 5/8x5 1/4	558	5.4	430	154-2400	Fu 5C650	5	Tim U-200	2F	R	•• 9.83

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL BASE: Minimum Standard	WHEEL BASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Dual unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive and Torque	Gear Ratio, Range in High
Federal																		
400R-1	133	193	29000	8648	10.00/20	11.00/20	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim O-100	Hy	R	4.63-7.8
400R-2	133	193	29000	8810	10.00/20	11.00/20	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim Q-200	Hy	R	7.64-8.38
400R-3	133	193	29000	8875	10.00/20	11.00/20	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim O-300	Hy	R	5.69-6.42
400R-4	133	193	31000	8760	10.00/20	11.00/22	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-100	Hy	R	4.11-7.40
400R-5	133	193	31000	8920	10.00/20	11.00/22	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-200	Hy	R	5.91-9.76
400R-6	133	193	31000	8980	10.00/20	11.00/22	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim R-300	H2	R	4.41-7.40
400R-7	133	193	36000	9130	11.00/20	12.00/20	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim U-200	H2	R	5.91-9.76
400R-8	133	193	36000	9260	11.00/20	12.00/20	Con T6427	6-4 1/8 x4 7/8	427	6.4	350	170-3000	Cla 290V	5	Tim U-300	H2	R	4.41-7.09
500R-1	133	193	33000	9625	11.00/20	11.00/22	Con U6501	6-4 1/2 x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R-100	H	R	4.11-7.40
500R-2	133	193	33000	9780	11.00/20	11.00/22	Con U6501	6-4 1/2 x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R-200	H2	R	5.91-9.76
500R-3	133	193	33000	9840	11.00/20	11.00/22	Con U6501	6-4 1/2 x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim R-300	H2	R	4.41-7.40
500R-4	133	193	37000	9990	11.00/20	12.00/20	Con U6501	6-4 1/2 x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim U-200	H2	R	5.91-9.76
500R-5	133	193	37000	10140	11.00/20	12.00/20	Con U6501	6-4 1/2 x5 1/4	501	6.1	413	182-2800	Fu 5A65	5	Tim U-300	H2	R	4.41-7.09
600R-1	133	193	39000	10702	11.00/22	12.00/24	Con R6602	6-4 7/8 x5 5/8	602	6.2	480	212-2800	Fu 5A65	5	Tim U-200	H2	R	5.91-9.76
600R-2	133	193	39000	10852	11.00/22	12.00/24	Con R6602	6-4 7/8 x5 5/8	602	6.2	480	212-2800	Fu 5A65	5	Tim U-300	H2	R	4.41-7.09
Ford Courier																		
Sedan Dlvy	115½	115½	4600	^3260	6.70/15S	7.10/15S	Own	6-3.62x3.6	223	8.0	202	137-4200	Own	3	Own	H1 5/6	H	4.09-4.27
Sedan Dlvy	115½	115½	4600	^3360	6.70/15S	7.10/15S	Own	8-3.62x3.3	272	8.0	260	173-4400	Own	3	Own	H1 1/2	H	4.09-4.27
F-100																		
Cowl	110	110	5000	2280	6.70/15S	6.50/16S	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	3	Own	H1 5/6	H	3.92
Cowl	110	110	5000	2380	6.70/15S	6.50/16S	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	3	Own	H1 1/2	H	3.73
F-250																		
Cowl	118	118	7400	2620	6.50/16S	8.00/20S	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	3	Own	HF	H	4.88
Cowl	118	118	7400	2725	6.50/16S	8.00/20S	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	3	Own	HF	H	4.56
F-350																		
Cowl	130	130	††9800	2990	8.00/18S	8.00/18	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	3	Own	HF	H	5.14-5.83
Cowl	130	130	††9800	3090	8.00/18S	8.00/18	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	3	Own	HF	H	4.86-5.14
F-500																		
Cab	130	154	15000	^4230	7.00/22D	8.00/22	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	4	Own	HF	H	6.20-6.80
Cab	130	154	15000	^4370	7.00/22D	8.00/22	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	5.83-6.20
F-600																		
Cab	130	172	17000	^4655	8.00/22D	9.00/22	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	4	Own	HF	H	6.80-7.20
Cab	130	172	17000	^4755	8.00/22D	9.00/22	Own■	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	6.20-6.80
F-700																		
Cab	132	192	21000	^5360	8.00/22D	10.00/22	Own♦	8-3.62x3.3	272	7.8	247	158-3800	Own	4	Own	HF	H	** -7.17
F-750																		
Cab	132	192	21000	^5735	9.00/22D	10.00/22	Own+	8-3.62x3.7	302	7.5	279	175-3800	Own	5	Own	HF	H	** -7.17
F-800																		
Cab	132	192	24000	^6275	10.00/22D	11.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	SF	H	7.17-7.67
F-900																		
Cab	132	192	29000	^6565	11.00/22D	12.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	SF	H	7.67-7.17
T-700																		
Cab	144	192	28000	^7630	8.00/22D	9.00/22	Own*	8-3.62x3.3	272	7.8	247	158-3800	Own	5	Own	HF	H	7.79-6.70
T-750																		
Cab	144	192	38000	^8930	9.00/22D	10.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	HF	H	7.79-7.07
T-800																		
Cab	144	192	42000	^9390	10.00/22D	11.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	SF	H	8.60-7.80
C-500 (c. f.)																		
Cab	110	158	15000	^4570	7.00/22D	8.00/22	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	5.83-6.20
C-600 (c. f.)																		
Cab	110	158	17000	^4810	8.00/22D	9.00/22	Own■	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	6.20-6.80
C-700 (c. f.)																		
Cab	116	156	21000	^5660	8.00/22D	10.00/22	Own♦	8-3.62x3.3	272	7.8	247	158-3800	Own	4	Own	HF	H	** -7.17
C-750 (c. f.)																		
Cab	116	156	21000	^5940	9.00/22D	10.00/22	Own+	8-3.62x3.7	302	7.5	279	175-3800	Own	5	Own	HF	H	** -7.17
C-800 (c. f.)																		
Cab	116	156	24000	^6330	10.00/22D	11.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	SF	H	7.17-7.67
C-900 (c. f.)																		
Cab	116	156	29000	^6780	11.00/22D	12.00/22	Own●	8-3.8x3.7	332	7.5	306	190-3800	Own	5	Own	SF	H	7.67-7.17
B-500 School Bus																		
Bus Chassis	154	154	13000	3940	7.00/22D	7.00/22	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	4	Own	HF	H	6.20-6.80
Bus Chassis	154	154	13000	4065	7.00/22D	7.00/22	Own	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	5.83-6.20
B-600 School Bus																		
Bus Chassis	192	220	17000	4530	8.00/22D	9.00/22	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	4	Own	HF	H	6.80-7.20
Bus Chassis	192	220	17000	4630	8.00/22D	9.00/22	Own■	8-3.62x3.3	272	7.8	260	167-4400	Own	4	Own	HF	H	6.20-6.80
B-700 School Bus																		
Bus Chassis	245	245	21000	5600	8.00/22D	10.00/22	Own♦	8-3.62x3.3	272	7.8	247	158-3800	Own	4	Own	HF	H	** -7.17
B-750 School Bus																		
Bus Chassis	245	245	21000	5905	9.00/22D	10.00/22	Own	8-3.62x3.7	302	7.5	279	175-3800	Own	4	Own	HF	H	** -7.17
P-350 Par. Del.																		
W/S	104	122	8000	2970	7.00/18D	8.00/20	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	3	Own	HF	H	4.88-5.88
P-500 Par. Del.																		
W/S	130	130	15000	3940	8.00/20S	8.00/20	Own	6-3.62x3.6	223	7.8	202	133-4000	Own	3	Own	HF	H	6.20-6.80
Kenworth (D)																		
‡521	153½	255	33000	12000	10.00/20	11.00/22	Cum NHB-600	6-5 1/2 x6	743	16.0	535	200-2100	BL 8241	12	Tim R200P	H2F	H	5.91-9.76
‡585	153½	255	33000	10700	10.00/20	11.00/22	HS 590-GV-3	6-5x5	590	6.6	490	232-2800	Fu 5-C720	15	Tim R200P	H2F	H	5.91-9.76
(D) *801	158½		73400	37400	†	†	Cu NHBID-600	6-5 1/2 x6	743	16.0	535	200-2100	Fu 10F1220^	10	Own	H2F	R	** -19.2
(D) *802	168		94000	45000		††	**	6-5 1/2 x6	743	12.0	800	300-2100	††		Own	H2F	R	** -19.2
(D) *802-A	168		94000	45000		††	**	6-5 1/2 x6	743	12.0	800	300-2100	Fu 10F1220	10	Own	H2F	R	** -19.2
Peterbilt (D)																		
260	175	Opt	27000	12500	10.00/20D	11.00/22	Cum NHB600	6-5 1/2 x6	743	17.0	500	200-2100	Spi 8041	12	Tim R-230DPA	2F	R	5.91-6.51
280 (coe)	114	Opt	27000		10.00/20	11.00/22	Cum NHB600	6-5 1/2 x6	743	17.0	500	200-2100	Spi 8041	12	Tim R-230DPA	2F	R	5.91-6.51
281	165	Opt	27000	10450	10.00/20	11.00/22	Cum NHB600	6-5 1/2 x6	743	17.0	500	200-2100	Spi 8045	12	Tim R-230P	2F	R	5.91-6.51
Reo																		
F-20-1	125	185	16000	4675	7.50/20	8.25/20	Own 255‡	6-3 5/8 x4 1/2	255	6.7	189	107-3400	WG-T98A	4	Tim E-100+	HF	H	6.2 -6.8
F-20-2	125	185	17000	4675	7.50/20	8.25/20	Own 255‡	6-3 5/8 x4 1/2	255	6.7	189	107-3400	WG-T98A	4	Tim E-100+	HF	H	6.2 -6.8
F-20-3	125	185	18000	4905	7.50/20	9.00/20	Own 255‡	6-3 5/8 x4 1/2	255	6.7	189	107-3400	WG-T98A	4	Tim E-100+	HF	H	6.2 -6.8
F-20T	125	125	16000	5025	7.50/20	7.50/20	Own 255‡	6-3 5/8 x4 1/2	255	6.7	189	107-3400	WG-T98A	4	Tim E-300	HFd	H	6.13-8.10
F-22-1	130	185	20000	5745	9.00/20	10.00/20	Own 292♣	6-3 7/8 x4 1/2	292	6.5	224	124-3300	Cla 205V	5	Tim H-100^	HF	H	6.16-6.8
F-22-2	130	185	21000	5745	9.00/20	10.00/20	Own 292♣	6-3 7/8 x4 1/2	292	6.5	224	124-3300	Cla 205V	5	Tim H-100^	HF	H	6.16-6.8
F-22-3	130	185	21000	5780	9.00/20	10.00/20	Own 292♣	6-3 7/8 x4 1/2	292	6.5	224	124-3300	Cla 205V	5	Tim H-100^	HF	H	6.16-6.8

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
					D-dual rear S-single rear													
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Available Tire Size (Dual's unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
F-22T	130	130	20000	6140	9.00/20	10.00/20	Own 292▲	6-3⅞x4½	292	6.5	224	124-3300	Cla 205V	5	Tim H-300△	HFd	H	6.67-8.85
F-22R-1	130	185	22000	6230	10.00/20	10.00/22	Own 331▲‡	6-4⅛x4½	331	6.4	264	140-3200	Cla 205V	5	Tim L-100△	HF	H	6.16-7.2
F-22R-2	130	185	24000	6230	10.00/20	10.00/22	Own 331▲‡	6-4⅛x4½	331	6.4	264	140-3200	Cla 205V	5	Tim L-100△	HF	H	6.16-7.2
F-22R-3	130	185	24000	6500	10.00/20	10.00/22	Own 331▲‡	6-4⅛x4½	331	6.4	264	140-3200	Cla 205V	5	Tim L-100△	HF	H	6.16-7.2
F-22RT	130	130	22000	6705	10.00/20	10.00/22	Own 331▲‡	6-4⅛x4½	331	6.4	264	140-3200	Cla 205V	5	Tim L-300△	HFd	H	6.36-8.28
F-50-1	130	185	28000	7090	10.00/20	11.00/20	Own 160■	6-4⅛x4½	331	6.7	290	160-3200	Spi 3152	5	Tim Q-100	HF	H	6.16-6.83
F-50-2	130	185	30000	7090	10.00/20	11.00/20	Own 160■	6-4⅛x4½	331	6.7	290	160-3200	Spi 3152	5	Tim Q-100	HF	H	6.16-6.83
F-50-3	130	185	30000	7160	10.00/20	11.00/20	Own 160■	6-4⅛x4½	331	6.7	290	160-3200	Spi 3152	5	Tim Q-100	HF	H	6.16-6.83
F-50-T	130	130	28000	7450	10.00/20	11.00/20	Own 160■	6-4⅛x4½	331	6.7	290	160-3200	Spi 3152	5	Tim QT-300	HFd	H	6.36-8.51
A-600	139	187	28000	8155	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim Q-100▲	HF	H	6.16-6.83
A-601	139	187	30000	8155	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim Q-100▲	HF	H	6.16-6.83
A-602	139	187	30000	8170	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim Q-100▲	HF	H	6.16-6.83
A-603	133	151	28000	8620	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim QT-300	HFd	H	6.63-8.51
A-607	151	187	26000	7680	9.00/20	10.00/20	Own OV-200△	6-3⅞x4½	390	7.3	345	200-3100	Spi 6352	5	Tim L-100▲	HF	H	6.16-7.2
A-700	139	187	30000	8255	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim R-100▲	HF	H	6.16-7.4
A-701	139	187	32000	8255	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim R-100▲	HF	H	6.16-7.4
A-702	139	187	32000	8270	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim R-100▲	HF	H	6.16-7.4
A-703	133	151	30000	8680	10.00/20	11.00/22	Own OV-195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim R-300	HFd	H	6.99-8.38
F-50D-1	130	185	28000	8310	10.00/20	11.00/22	Cum JT-G-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim Q100▲	HF	H	5.28-6.83
F-50D-2Q	130	185	30000	8310	10.00/20	11.00/22	Cum JT-G-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim Q100▲	HF	H	5.28-6.83
F-50D-2R	130	185	32000	8345	10.00/20	11.00/22	Cum JT-G-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim R100▲	HF	H	5.28-6.83
F-50D-3	130	185	30000	8380	10.00/20	11.00/22	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim Q100▲	HF	H	5.28-6.83
F-50D-T	130	130	28000	8610	10.00/20	11.00/22	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim QT300	HFd	H	5.62-7.69
F-506D	155	203	42000	11215	9.00/20	10.00/20	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim SLD	F2	T	7.67-9.33
F-536D	155	200	48000	13000	10.00/20	11.00/22	Cum JT-6-B	6-4½x5	401	16.0	412	175-2500	Spi 6352	5	Tim SQD	F2	T	7.54-9.21
AC-603	108	154	28000		10.00/20	11.00/22	Own OV195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim QT300	HFd	H	6.63-8.51
AC-703	108	154	30000		10.00/20	11.00/22	Own OV195▼	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim R300	HFd	H	6.42-8.00
F-120L	187	187	18000		7.50/20	9.00/20	Own 255	6-3⅝x4½	255	6.7	189	107-3400	WG T-98A	4	Tim E-100♦	HF	H	6.8-7.2
F-120G	219	219	18500		8.25/20	9.00/20	Own 255	6-3⅝x4½	255	6.7	189	107-3100	WG T-98A	4	Tim E-100♦	HF	H	6.8-7.2
F-120H	238	238	18500		8.25/20	9.00/20	Own 255	6-3⅝x4½	255	6.7	189	107-3400	WG T-98A	4	Tim E-100♦	HF	H	6.8-7.2
F-122H	238	238	21000		8.25/20	10.00/20	Own 292	6-3⅞x4½	292	6.5	224	124-3300	Cla 205	4	Tim H-100♦	HF	H	6.8-7.2
F-122J	256	256	21000		8.25/20	10.00/20	Own 292	6-3⅞x4½	292	6.5	224	124-3300	Cla 205	4	Tim H-100♦	HF	H	6.8-7.2
Studebaker 2E5	112	122	4800	2070	6.00/16S	6.50/16S	Own 1E	6-3x4½	186	7.5	152	92-3800	Own	3	Own	H½	H	4.27-4.89
2E6	112	122	5000	2250	6.00/16S	6.50/16S	Own 4E	6-3⅛x4⅝	216	7.5	204	106-3400	Own	3	Own	H½	H	4.09-4.27
2E7	112	122	5000	2385	6.00/16S	6.50/16S	Own 2E	6-3⅛x2½	224	7.5	202	140-4500	Own	3	Own	H½	H	4.09-4.27
2E10	122	122	6700	2315	7.00/16S	7.50/17S	Own 1E	6-3x4½	186	7.5	152	92-3800	Own	3	Own	HF	H	** -4.88
2E11	122	122	7000	2535	7.00/16S	7.50/17S	Own 4E	6-3⅛x4⅝	246	7.5	204	106-3100	Own	3	Own	HF	H	4.10-4.88
2E12	122	122	7000	2625	7.00/16S	7.50/17S	Own 2E	6-3⅛x2½	224	7.5	202	140-4500	Own	3	Own	HF	H	4.10-4.88
2E13	131	131	9600	3140	7.00/17S	7.50/16	Own 3E	6-3⅛x3¼	259	7.5	236	156-4500	Own	4	Own	HF	H	** -5.14
2E14	131	131	9600	3050	7.00/17S	7.50/16	Own 4E	6-3⅛x4⅝	246	7.5	204	106-3100	Own	4	Own	HF	H	5.14-5.83
2E28	131	155	14000	3800	7.50/17	7.50/20	Own 3E	6-3⅛x3¼	259	7.5	236	156-4500	Own	4	Own■	SF	H	5.14-5.83
2E28B	131	155	15000	3840	7.50/17	8.25/20	Own 3E	6-3⅛x3¼	259	7.5	236	156-4500	Own	4	Own■	SF	H	5.14-5.83
2E38	131	171	16000	4410	7.50/20‡	9.00/20	Own 5E	6-3⅛x3¼	259	7.5	236	156-4500	Own	4	Own■	HF	H	** -6.80
2E38B	131	212	18000	4410	7.50/20‡	9.00/20	Own 5E	6-3⅛x3¼	259	7.5	236	156-4500	Own	4	Own■	HF	H	** -6.80
Ward La Fr. D-1	149	220	25000	*9500	10.00/20	11.00/20	Con T6427	6-4⅛x4⅞	427	5.1	340	152-2600	Ful 5A130	5	Tim Q-100	B	R	** -6.83
D-1C	149	220	29000	*9500	11.00/20	11.00/22	Con T6427	6-4⅛x4⅞	427	5.1	340	152-2600	Ful 5A130	5	Tim U-200	S2	R	** -7.06
D-3	149	220	29000	*10000	11.00/20	11.00/22	Con R6572	6-4⅝x5⅝	572	5.9	440	189-2600	Ful 5C650	5	Tim R-200	S2	R	** -7.84
D-3S	149	220	29000	*10000	11.00/20	11.00/22	Con R6602	6-4⅞x5⅝	602	5.9	463	198-2600	Ful 5C650	5	Tim R-200	S2	R	** -7.84
(D) D-5	149	220	35000	*12500	11.00/22	11.00/22	Cum HB600	6-4⅞x6	672	17.0	500	150-1800	Ful 5C650	5	Tim R-200	S2	R	** -6.42
White Freightliner (c.o.e.) WF-42	115	120		10600	10.00/20		Cum NH6	6-5½x6	743	13.0	575	200-2100	Spi 9041	8	Tim R-330	SFd	H	4.77-6.38
Four-Wheel-Drive																		
Biederman PM62	162	162	40000	15040	10.00/20D	11.00/20	Cum NHB600	6-5½x6	743	16.0	535	200-2100	Fu R950C	10	Tim SW3458P	WF	L	** -6.17
Coleman G-55	150	160	34000	12000	11.00/20	12.00/20	Buda LO-525	6-4½x5½	525	6.7	400	150-2200	Fu 5A650	5	OW-289-CM	2		7.17-9.72
G-55	150	160	34000	12000	11.00/20	12.00/20	Wau 140GZ	6-4⅝x5½	554	6.4	451	188-2600	Fu 4A86	4	OW-289-CM	2		7.17-9.72
(D) D-55	150	160	34000	13000	11.00/20*	12.00/20	Cum HB600	6-4⅞x6	672	17.0	500	150-1800	Fu 5A650■	5	OW-289-CM	2		7.17-9.72
Diamond T T422-22M	154	190	††	9500	7.50/20	9.00/20	Con K6271	6-3⅝x4⅝	271	6.5	216	112-3000	Cla 205V	5	Eat 22M	HF	R	Opt
(D) 921N-SWA58	169	241	††	16300	9.00/20	11.00/22	Cum NHB600	6-5½x6	743	15.5	537	200-2100	Fu 10B1120	10	Tim SW456	WF	R	Opt
(D) 950RS-SFDD4600	194	254	††	19400	9.00/20	12.00/24	Cum NHRBS600	6-5½x6	743	12.0	600	300-2100	Fu 10B1120	10	Tim SFDD4600	2F	R	Opt
Dodge C-3-PW8	126	126	9500	3950	7.50/16S	9.00/16S	Own T-137	6-3½x4⅝	230	7.3	191	103-3800	NP 88790	4	Own T-137	HyF	H	4.89-5.83
Fabco (c) FD50A	114	123	5800	3800	6.00/16	6.50/16	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	H½	H	** -3.9
(c) FD50B		110	6000	3600	6.00/16	6.50/16	Ford	6-3.6x3.6	223	7.5	195	118-2800	Ford*	8	Ford	H½	H	** -4.27
(c) FD50B		110	6000	3800	6.00/16	6.50/16	Ford	6-3.5x3.1	239	7.5	215	122-4200	Ford*	8	Ford	H½	H	** -4.27
(c) FD76A	123		8500	4000	6.00/15	7.50/17	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	Hyf	H	** .4-57
(c) FD76B	118		8500	4000	6.50/16	7.50/17	Ford	6-3.6x3.6	223	7.5	195	118-3800	Ford*	8	Ford	HF	H	** -4.88
(c) FD75B	118		8500	4000	6.50/16	7.50/17	Ford	6-3.5x3.1	239	7.5	215	132-4200	Ford*	8	Ford	HF	H	** -4.88
(c) FD101A	135		11400	4400	7.00/17	7.00/18	Chevrolet	6-3⅞x3½	236	7.5	200	112-3700	Chevrolet*	8	Chevrolet	Hyf	H	** -5.14
(c) FD101B	130		11400	4400	7.00/17	7.50/16D	Ford	6-3.6x3.6	223	7.5	195	118-3800	Ford*	8	Ford	HF	H	** -5.83
(c) FD101B	130		11400	4400	7.00/17	7.50/16D	Ford	6-3.5x3.1	239	7.5	215	132-4200	Ford*	8	Ford	HF	H	** -5.83
(c) FD201A	130	172	19000	5700	7.50/20	9.00/20	Chevrolet	6-3⅞x3½	261	7.2	220	135-4000	Chevrolet*	8	Chevrolet	Hyf	H	** -6.17
(c) FD201B	130	172	19000	5700	7.50/20	8.25/20	Ford	6-3.5x3.1	239	7.5	215	132-4200	Ford*	10	Ford	HF	H	** -6.8
(c) FD201B	130	172	19000	5700	7.50/20	8.25/20	Ford	6-3.6x3.1	256	7.5	228	140-3900	Ford*	10	Ford	HF	H	** -6.8
(c) FD251B	130	172	27000	7500	8.25/20	9.00/20	Ford	6-3.8x3.5	317	7.2	286	170-3900	Ford*	10	Ford	SF	H	7.17-7.67
Federal T400R-1	157	205	44000	12690	10.00/20	11.00/22	Con T6427	6-4⅛x4⅞	427	6.4	350	170-3000	Cla 290V	5	Tim SQD	H2	L	5.78-9.21
T500R-1	157	205	45000	14305	10.00/20	11.00/22	Con U653I	6-4½x5½	501	6.1	413	182-2800	Ful 5A65	5	Tim SQD	H2	L	5.78-9.21
T600R-1	157	216	60000	16975	11.00/22	12.00/24	Con R6602	6-4⅞x5⅝	602	6.2	480	212-2800	Ful 5A65	5	Tim SFD4600	H2	L	8.07-11.6
T600R-4	157	216	60000	16585	11.00/22	12.00/24	Con R6602	6-4⅞x5⅝	602	6.2	480	212-2800	Ful 5A65	5	Tim SW456	W	L	4.71-8.2
FWD 140	142	Opt	14500	*6250	7.50/20D	10.00/20S	Int SD240	6-3⅞x4⅛	240	7.0	208	131-3800	WG T9	8	Own 13B	SF	H	** -6.17
171	154	Opt	17500	*6900	8.25/20D	10.00/20S	Int BD282	6-3⅞x4⅛	282	6.5	251	137-3600	Int F51C	5	Own 13C	SF	H	5.86-10.5
222	154	Opt	22000	*7850	9.00/20D	10.00/20S	Int BD308	6-3⅞x4½	308	6.5	273	145-3600	Int F51C	5	Own 23	SF	H	4.86-8.98
(D) 223D	154	Opt	22000	*8685	9.00/20D	10.00/20S	GMC 371	3-4½x5	213	16.0	300	100-2000	Ful 5A430	5	Own 23	SF	H	4.86-8.98
264	154	Opt	26000	*8450	10.00/20D	10.00/20	Int RD372	6-4⅝x4½	372	6.5	309	165-3200	Ful 5A43	5	Own 23	SF	H	4.86-8.98

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE		Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear, S-single rear)		ENGINE DETAILS						TRANSMISSION		REAR AXLE			
	Minimum Standard	Maximum Standard			Standard Front and Rear	Maximum Authorized Tire Size (Duals unless noted)	Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	Make and Model	Forward Speeds	Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range in High
Four-Wheel—Cont'd																		
FWD—Cont'd																		
(D) 264D	154	Opt	26000	^9230	10.00/20D	10.00/20	GMC 471	4-4¼x5	284	16.0	385	150-2100	Ful 5C650	5	Own 23	SF	H	4.86-8.98
M264	161	Opt	26000	^8500	10.00/20D	10.00/20	Int RD372	6-4⅜x4½	372	6.5	309	165-3200	Ful 5A43	5	Own 23	SF	H	4.86-8.98
(D) M264D	161	Opt	26000	^9280	10.00/20D	10.00/20	GMC 471	4-4¼x5	284	16.0	385	150-2100	Ful 5C650	5	Own 23	SF	H	4.86-8.98
285	154	Opt	28000	^10700	11.00/20D	13.00/20S	Int RD406	6-4⅜x4½	406	6.5	338	175-3200	Ful 5A62	5	Own 33A	SF	H	4.86-8.98
326	154	Opt	32000	^11715	11.00/20D	13.00/20S	Int RD450	6-4⅜x5	450	6.2	387	182-3000	Ful 5A62	5	Own 33A	SF	H	4.18-12.2
(D) 324D	159	Opt	32000	^12350	11.00/20D	13.00/20S	GMC 471	4-4¼x5	284	16.0	385	150-2 00	Own 35	5	Own 33	SF	H	4.85-14.1
(D) 324D	154	Opt	32000	^12495	11.00/20D	13.00/20S	GMC 471	4-4¼x5	284	16.0	385	150-2 00	Ful 5C650	5	Own 33A	SF	H	4.18-12.2
(D) 327D	176	Opt	32000	^13295	11.00/20D	13.00/20S	Cum HRB	6-5½x6	743	16.0	540	165-1800	Ful 5C720	5	Own 33A	SF	H	4.18-12.2
366	150	Opt	36000	^12600	11.00/20D	13.00/20S	Wau 140GZB	6-4⅝x5½	554	6.4	460	188-2600	Own 35	5	Own 33	SF	H	4.85-14.1
367	154	Opt	36000	^12065	11.00/20D	13.00/20S	Int RD501	6-4½x5¼	501	6.5	444	212-3000	Ful 5C65	5	Own 33	SF	H	4.85-14.1
(D) 368D	176	Opt	36000	^13680	11.00/20D	13.00/20S	Cum HRBB	6-5½x6	743	16.0	505	180-2000	Ful 5C720	5	Own 33	SF	H	4.85-14.1
406	154	Opt	40000	^13900	12.00/20D	14.00/20S	Wau 145GK	6-5¼x6	779	6.2	595	216-2000	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
406	154	Opt	40000	^15000	12.00/20D	14.00/20S	Wau 145GKB	6-5¼x6	779	6.2	595	210-2100	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
(D) 406D	154	Opt	40000	^14400	12.00/20D	14.00/20S	GMC 6-71	6-4¼x5	426	16.0	600	200-2000	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
(D) 409D	154	Opt	40000	^14570	12.00/20D	14.00/20S	Cum NHB	6-5½x6	743	. . .	535	200-2100	Ful 10A1120	10	Own 33	SF	H	5.71-8.53
M10G	150	180	44000	^15800	12.00/20D	14.00/20S	Wau 145GK	6-5¼x6	779	6.2	540	186-2000	Own M	10	TW 79721	2F	H	6.7 -9.2
Marmon-Herr M104	110	118	5300	3800	6.50/16	7.10/15	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	4	Ford	H	H	** -4.27
6M104	110	118	5300	3800	6.50/16	7.10/15	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	4	Ford	H	H	** -4.27
M254	118	. . .	8000	4200	7.50/17	8.00/17	Ford	8-3.62x3.3	272	7.8	260	167-4 00	Ford	8	Ford	H	H	** -4.88
6M254	118	. . .	8000	4200	7.50/17	8.00/17	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -4.88
M354	130	. . .	8000	4300	7.00/18	8.00/17	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
6M354	130	. . .	8000	4300	7.00/18	8.00/17	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -5.83
M504	130	154	17500	5700	7.00/22	8.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
6M504	130	154	17500	5700	7.00/22	8.00/22	Ford	6-3.62x3.6	223	7.8	202	133-4000	Ford	8	Ford	H	H	** -5.83
CM504	134	158	17500	5900	7.00/22	8.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -5.83
M604	130	172	20000	5640	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -6.80
CM604	134	158	20000	5850	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.8	260	167-4400	Ford	8	Ford	H	H	** -6.80
M704	132	192	22000	7000	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.6	259	168-3800	Ford	8	Ford	H	H	** -7.17
CM704	134	158	22000	7600	9.00/22	10.00/22	Ford	8-3.62x3.3	272	7.6	259	168-3800	Ford	8	Ford	H	H	** -7.17
M754	132	192	24000	7400	9.00/22	10.00/22	Ford	8-3.62x3.7	302	7.5	286	186-3800	Ford	10	Ford	H	H	** -7.17
CM754	132	156	24000	7600	9.00/22	10.00/22	Ford	8-3.62x3.7	302	7.5	286	186-3800	Ford	10	Ford	H	H	** -7.17
M804	132	192	26000	7600	10.00/22	11.00/22	Ford	8-3.8x3.66	332	7.5	305	190-3800	Ford	10	Ford	SB	H	** -7.17
CM804	132	156	26000	7900	10.00/22	11.00/22	Ford	8-3.8x3.66	332	7.5	305	190-3800	Ford	10	Ford	SB	H	** -7.17
M904	132	192	29000	7800	11.00/22	11.00/24	Ford	8-3.8x3.66	332	7.5	316	200-3800	Ford	10	Ford	SB	H	** -7.17
CM904	132	156	29000	7900	11.00/22	11.00/24	Ford	8-3.8x3.66	332	7.5	316	200-3800	Ford	10	Ford	SB	H	** -7.17
MH-610	159	193	24000	9547	10.00/20D	11.00/20	Her WXLC3	6-4¼x4⅜	404	6.5	312	139-2600	MH610	10	MH610A	HyF	H	** -6.80
MH-615	159	193	26000	10158	10.00/20D	11.00/20	Her WXLC3	6-4¼x4⅜	404	6.5	312	139-2600	MH615	10	MH615A	2S	H	** -8.43
MH-620	159	193	28000	10615	10.00/20D	11.00/20	Her RXLC	6-4⅝x5¼	529	6.0	408	146-2100	MH620	10	MH620A	2S	H	** -8.43
MH-625	159	193	30000	11511	11.00/20D	12.00/20	Her RXLC	6-4⅝x5¼	529	6.0	408	146-2100	MH625	10	MH625	2S	H	** -8.59
MH-630	159	193	33000	11711	11.00/20D	12.00/20	Her RXLDH	6-4⅝x5¼	558	6.0	440	180-2600	MH630	10	MH630	2SF	H	** -8.59
NAPCO Power-Pak																		
(C) 3653	125	. . .	8000	3300	6.00/15	7.50/17	C-Thrift-Mas	6-3⅞x3½	236	7.5	200	112-3700	Chev.	8	Chev.	HyF	H	** -4.57
(C) 4153	137	. . .	15700	4945	6.50/20D	7.50/20D	C-Load-Mas	6-3⅞x3½	236	7.5	200	112-3700	Chev.	8	Chev.	HyF	H	** -6.17
(C) 4453	161	. . .	15700	5095	6.50/20D	7.50/20D	C-Load-Mas	6-3⅞x3½	236	7.5	200	112-3700	Chev.	8	Chev.	HyF	H	** -6.17
(C) 6153	137	. . .	17700	5190	7.50/20D	8.25/20D	C-Job-Mas	6-3⅝x3½	261	7.2	220	135-4000	Chev.	8	Chev.	HyF	H	** -6.17
(C) 6453	161	. . .	17700	5315	7.50/20D	8.25/20D	C-Job-Mas	6-3⅝x3½	261	7.2	220	135-4000	Chev.	8	Chev.	HyF	H	** -6.17
(C) 6553	179	. . .	17700	5425	7.50/20D	8.25/20D	C-Job-Mas	6-3⅝x3½	261	7.2	220	135-4000	Chev.	8	Chev.	HyF	H	** -6.17
(C) 5453	134	. . .	17700	5225	7.50/20D	8.25/20D	C-Job-Mas	6-3⅝x3½	261	7.2	220	135-4000	Chev.	8	Chev.	HyF	H	** -6.17
(C) 5753	158	. . .	17700	5350	7.50/20D	8.25/20D	C-Job-Mas	6-3⅝x3½	261	7.2	220	135-4000	Chev.	8	Chev.	HyF	H	** -6.17
Oshkosh W-214	150	205	22000	9025	9.00/20D	9.00/20	Con B6427	6-4⅛x4⅞	427	. . .	328	137-2600	Own W-214	5	Own W-214	HF	H	** -6.2
W-214-D	150	205	22000	9300	9.00/20	9.00/20	Con T6427	6-4⅛x4⅞	427	. . .	308	124-2100	Own W-214	5	Own W-214	HF	H	** -6.2
W-314	150	205	25000	^9650	10.00/20D	10.00/20	Con B6427	6-4⅛x4⅞	427	. . .	328	137-2600	Own W-314	5	Own W-314	HF	H	** -6.2
W-314-D	150	205	25000	9700	10.00/20	10.00/20	Con T6427	6-4⅛x4⅞	427	. . .	308	124-2100	Own W-314	5	Own W-314	HF	H	** -6.2
W-414	150	205	28000	^10150	10.00/20D	10.00/20	Con T6427	6-4⅛x4⅞	427	. . .	342	157-2600	Own W-414	5	Own W-414	HF	H	** -6.2
W-1700	150	205	30000	^11200	11.00/20D	12.00/20S	Her RXC	6-4⅝x5¼	529	. . .	410	145-2200	Own W-1700	5	Own W-1700	SF	H	** -6.4
W-1700-15-C 160		. . .	32000	12300	11.00/20D	12.00/20	Con R6513	6-4½x5⅝	513	. . .	427	190-2600	O. W-1700-15	10	O. W-1700-15	SF	H	** -7.15
W-1700-15-CR 160		. . .	32000	12300	11.00/20D	12.00/20	Con R6513	6-4½x5⅝	513	. . .	427	190-2600	O. W-1700-15	10	O. W-1700-15	SF	H	** -7.27
W-614	150	205	32000	12200	11.00/20D	12.00/20	Con R6513	6-4½x5⅝	513	. . .	427	190-2600	Own W-614	5	Own W-614	SF	H	** -7.1
W-814	150	205	36000	12600	11.00/20D	12.00/20	Con R6572	6-4⅝x5⅝	572	. . .	464	210-2600	Own W-814	5	Own W-814	SF	H	** -7.1
W-815	150	205	36000	12600	11.00/20D	12.00/20	Con R6602	6-4⅞x5⅝	602	. . .	484	218-2600	Own W-815	5	Own W-815	SF	H	** -7.1
W-824	150	205	36000	12800	11.00/20D	12.00/20	Con R6572	6-4⅝x5⅝	572	. . .	464	210-2600	Own W-824	5	Own W-824	2F	H	** -7.2
W-825	150	205	36000	12800	11.00/20D	12.00/20	Con R6602	6-4⅞x5⅝	602	. . .	484	218-2600	Own W-825	5	Own W-825	2F	H	** -7.2
W-816	150	205	36000	14100	12.00/20D	12.00/20	Cum HB600	6-4⅞x6	672	. . .	500	150-2000	Own W-816	5	Own W-816	SF	H	** -5.6
W-826	150	205	36000	14300	12.00/20D	12.00/20	Cum HB600	6-4⅞x6	672	. . .	500	150-2000	Own W-826	5	Own W-826	2F	H	** -5.6
W-817	158	205	36000	14400	12.00/20D	12.00/20	Cum HRFB600	6-5¼x6	743	. . .	505	180-2000	Own W-817	5	Own 817	SF	H	** -5.4
W-827	158	205	36000	14600	12.00/20D	12.00/20	Cum HRFB600	6-5¼x6	743	. . .	505	180-2000	Own W-827	5	Own 827	2F	H	** -5.4
(D) WA-906	160	205	40000	^16000	13.00/20D	14.00/20S	Cum HRFB600	6-5¼x6	743	. . .	505	180-2000	Own WA-906	12	Own WA-906	2F	H	** -6.15
W2211	160	205	42000	^16500	13.00/20D	14.00/20S	Wau 145GBK	6-5¼x6	779	. . .	590	210-2400	Own W-2211	12	Own W-2211	2F	H	** -6.15
W2206	160	205	54000	^19000	13.00/24D	14.00/24	HS 1091G1	6-5⅜x7	■	. . .	960	330-2000	Own W-2206	10	Own W-2206	2F	H	** -6.3
(D) WA2208	160	205	42000	^16900	13.00/20D	14.00/20S	Cum NHB-600	6-5¼x6	743	. . .	535	200-2100	Own WA-2208	12	Own WA-2208	2F	H	** -6.15
(D) W2209	160	205	54000	^19500	13.00/24D	14.00/24	Cum NHRS600	6-5½x6	743	. . .	800	300-2100	Own W-2209	10	Own W-2209	2F	H	** -6.30
Walter (c.f.) FZM	126	150	24000	9000	12.00/20S	. . . . .	Wau MZA	6-4¼x4¾	404	5.6	290	125-2600	Own FJN	6	Own MS	2	H	** -8.00
(c.f.) AEB	126	150	34000	13000	12.00/24S	. . . . .	Wau 140GZ	6-4⅝x5½	554	6.2	440	165-2250	Own FC	6	Own FCC	2	H	** -9.00
(c.f.) AGB	138	162	34000	14000	12.00/24S	. . . . .	Wau 145GK	6-5¼x6	779	6.2	585	215-2000	Own FA	6	Own FCC	2	H	** -9.00
(c.f.) AGR	138	162	42000	15000	12.00/24D	. . . . .	Wau 145GK	6-5¼x6	779	6.2	585	215-2000	Own FA	6	Own FCR	2	H	** -9.00
Ward La France FD1	. . . .	. . . .	35000	^11500	11.00/22	11.00/22	Cont 6513	6-4½x5¾	513	5.9	405	180-2800	Ful 5A620	5	Tim R462W	S2	R	** -8.15
(D) FD2	. . . .	. . . .	35000	^12000	11.00/24	11.00/24	Cum HB600	6-5½x6	672	17.0	500	150-1800	Ful 5A920	5	Tim R462W	S2	R	** -8.15
Willys Jeep CJ-3B	80	80	3500	*2243	6.00/16S	9.00/13S	Own F4-134	4-3½x4⅜	134	6.9	114	72-4000	WG T90C	16	Spi 44-2	Hy½	H	** -5.38
CJ-5	81	81	3750	*2274	6.00/16S	9.00/13S	Own F4-134	4-3½x4⅜	134	6.9	114	72-4000	WG T90C	16	Spi 44-2	Hy½	H	** -5.38
F4-134-4WD	118	118	6000	*3200	7.00/16S	9.00/13S	Own F4-134	4-3½x4⅜	134	6.9	114	72-4000	WG T90C	16	Spi 53	H½	H	** -5.38
6G-226-4WD	118	118	6000	*3311	7.00/16S	9.00/13S	Own L6-226	6-3⅞x4⅜	226	5.9	190	115-3650	WG T90J	16	Spi 53	H	H	4.88-5.38
CJ-6	101	101	3900	2336	6.00/16S	9.00/13S	Own F4-134	4-3½x4⅜	134	6.9	114	72-4000	WG T90C	16	Spi 44-2	Hy½	H	** -5.38

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*continued*

MAKE AND MODEL	WHEEL-BASE Minimum Standard	WHEEL-BASE Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES D-dual rear S-single rear Standard Front and Rear	TIRE SIZES Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION Make and Model	Forward Speeds	REAR AXLE Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range In High
Six-Wheelers																		
Autocar C6564	158	182	45000	13550	10.00/20	11.00/20	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Fu 5C720	5	Tim SQD	2HF	L	5.78-9.21
C9564	170		50000	15300	10.00/20	11.00/20	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Spi 8041†	4	Tim SQD	2HF	L	5.78-9.21
C6764-OH	170		50000	14900	10.00/22	11.00/20	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Fu 5C720†	5	Tim SQD	2HF	L	5.78-9.21
C9764-OH	170	182	55000	15700	10.00/20	11.00/24	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Spi 8041†	4	Tim SRD	2HF	L	7.54-9.21
C10364S-OH	171		65000	17900	11.00/22	12.00/24	Wh 390A	6-4⅜x5	531	6.4	440	200-2900	Spi 8041†	4	T-SFD4600	2HF	L	8.07-11.56
(D) DC6564	158	182	45000	13800	10.00/20	11.00/20	Cum JT	6-4½x5	401	15.8	406	175-2500	Fu 5C720	5	Tim SQD	2HF	L	5.78-9.21
(D) DC6764-OH	170		50000	15000	10.00/20	11.00/20	Cum JT	6-4½x5	401	15.8	406	175-2500	Fu 5C720†	5	Tim SQD	2HF	L	5.78-9.21
(D) DC7564	168		45000	15500	10.00/20	11.00/20	Cum HRB	6-5½x6	743	15.5	537	165-1800	Fu 5C720†	5	Tim SQD	2HF	L	5.78-9.21
(D) DC9564	171		50000	16200	10.00/20	11.00/20	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	Tim SQD	2HF	L	5.78-9.21
(D) DC10264	198	235	50000	16500	10.00/20	11.00/20	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	Tim SQD	2HF	L	5.78-9.21
(D) DC9764-OH	171	181	55000	16600	10.00/20	11.00/24	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	Tim SRD	2HF	L	7.54-9.21
(D) DC10364S-OH	171	295	65000	20000	11.00/22	12.00/24	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	T-SFD4600	2HF	L	8.07-11.56
(D) DC10464-OH	198	235	50000	17500	10.00/22	11.00/20	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	Tim SQD	2HF	L	5.78-9.21
(D) DC10464S-OH	190	259	65000	20000	11.00/22	12.00/24	Cum HRB	6-5½x6	743	15.5	537	165-1800	Spi 8041†	4	T-SFD4600	2HF	L	8.07-11.56
Available *560S	Opt	Opt	40000	^11750	10.00/20D	11.00/20	Wau 135GZ	6-4⅝x5	451	6.3	350	155-2800	Fu 5A62•	5	Tim SLD	2F	R	** -7.00
*600S	Opt	Opt	46000	^12350	10.00/20D	11.00/24	Wau 140GK	6-4½x5½	525	6.4	405	188-2800	Fu 5A65•	5	Tim SQD	2F	R	** -7.54
*610S	Opt	Opt	60000	^14700	11.00/20D	12.00/24	Wau 145GK	6-5¼x6	779	6.2	600	230-2200	Spi 8051A•	5	Tim SW456	2F	R	** -7.60
(D) *630SD	Opt	Opt	60000	^16250	11.00/20D	12.00/24	Cum NHB	6-5½x6	743	17.0	535	200-2100	Spi 8051A•	5	Tim SFD4600	2F	R	** -8.07
Brockway 148SLD	154	198	40000	10125	10.00/20	10.00/20	BC 428D	6-4⅛x4⅞	427	6.4	352	165-3000	Fu 5A43†	15	Tim SLDD	HF	L	6.44-7.0
153SQ	156	204	45000	13275	11.00/20	11.00/20	BC 428D	6-4⅛x4⅞	427	6.4	352	165-3000	Fu 5A43†	15	Tim SQDD	HF	L	6.44-7.54
260SQ	156	204	50000	14125	11.00/20	11.00/20	BC 488D	6-4⅝x5½	572	6.3	484	230-2800	Fu 5C65†	15	Tim SQDD	HF	L	6.44-7.54
260SF	156	204	60000	15350	11.00/22	11.00/24	BC 488D	6-4⅝x5½	572	6.3	484	230-2800	Fu 5C65†	15	Tim SFDD	HF	L	8.07-9.02
Diamond T 522-28M	154	190	(a)	10100	8.25/20	10.00/20	DC K6330	6-4x4½	330	6.5	266	141-3000	Opt	Op	Eat 28M	HF	L	Opt
630-32M	157	223	(b)	12000	8.25/20	10.00/20	Own XL406	6-4⅝x4½	406	6.5	338	164-2750	Opt	Op	Eat 32M	SF	L	Opt
730-SLDD	157	241	(c)	12700	10.00/20	10.00/22	Own XL450	6-4⅝x5	451	6.5	388	174-2600	Opt	Op	Tim SLDD	2F	L	Opt
(T) 830-SQW	157	241	35000	12800	10.00/20	10.00/22	Own XL501	6-4⅞x5½	501	6.5	430	201-3000	Opt	Op	Tim SQW	WF	L	Opt
(T) 921-38M	187	241	(d)	15650	9.00/20	11.00/22	Cum HB600	6-4½x6	672	17.0	500	150-1800	Fu 10B1120	10	Eat 36M	HF	L	Opt
(T) 921R-SQDD	160	241	(d)	15300	9.00/20	11.00/20	Cum HRBS	6-5½x6	743	15.5	502	180-2000	Fu 10B1120	10	Tim SQDD	2F	L	Opt
Dodge C-3-YX6	154	190	40000	11525	10.00/20D	10.00/20	Own T-353	6-4⅞x5⅛	413	6.5	343	171-3200	Cla 290V2	5	Tim SW3020	ASF	L	** -8.5
Duplex TH6	162	220	30000	9180	8.25/20	9.00/20	Her JXD	6-4x4½	320	6.2	240	113-3000	Fu 5B33‡	10	Tim SBD1055	BF	L	** -6.16
RH-6	160	208	40000	11500	10.00/20	11.00/20	Her WXLC3	6-4¼x4¾	404	5.8	312	139-2600	Fu 5A43	5	Tim SD3010	2F	R	8.27-
(D) L6	172	208	45000	15000	11.00/20	12.00/20	Cum HB600	6-4½x6	672	17.0	495	150-1800	Fu 5A920	5	Tim SD454	SF2	L	6.6-8.15
Fabco (c) FD201A	130	Opt	30000	10500	8.25/20	9.00/20	Chevrolet	6-3½x3⅛	261	7.2	220	135-4000	Chevrolet*	8	Chevrolet	HyF	H	** -6.17
(c) FD201B	130	Opt	30000	10500	8.25/20	9.00/20	Ford	8-3.5x3.1	239	7.5	215	132-4000	Ford*	10	Ford	HF	H	** -6.8
(c) FD201B	130	Opt	30000	10500	8.25/20	9.00/20	Ford	8-3.6x3.1	256	7.5	228	140-3300	Ford*	10	Ford	HF	H	** -6.8
(c) FD251B	130	Opt	40000	13000	8.25/20	9.00/20	Ford	8-3.8x3.5	317	7.2	286	170-3900	Ford*	10	Ford	SF	H	7.17-7.67
FWD 6-324	154	Opt	32000	^12000	8.25/20D	10.00/20	Int RD372	6-4⅝x4½	372	6.5	309	165-3200	Ful 5A820	10	Own 6-23	SF	T	4.7-11.5
6-325	154	Opt	32000	^12000	8.25/20D	10.00/20	Int RD406	6-4⅝x4½	406	6.5	338	175-3200	Ful 5A820	10	Own 6-23	SF	T	4.7-11.5
6-366	154	Opt	36000	^12440	9.00/20D	10.00/20	Int RD450	6-4⅝x5	450	6.2	387	182-3000	Ful 5C650	10	Own 6-23	SF	T	4.7-11.5
(D) 6-364D	154	Opt	36000	^13220	9.00/20D	10.00/20	GMC 4-71	4-4½x5	284	16.0	385	150-2100	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
(D) 6-368D	188	Opt	36000	^14070	9.00/20D	10.00/20	Cum HRBS	6-5½x6	743		505	180-2000	Ful 5C72	10	Own 6-23	SF	T	4.7-11.5
6-407	154	Opt	40000	^12780	10.00/20D	10.00/20	Int RD501	6-4¼x5¼	501	6.5	444	212-3000	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
(D) 6-406D	188	Opt	40000	^14410	10.00/20D	10.00/20	GMC 6-71	6-4¼x5	426	16.0	600	200-2000	Ful 5A1120	10	Own 6-23	SF	T	4.7-11.5
(D) 6-409D	188	Opt	40000	^14360	10.00/20D	10.00/20	Cum NHB	6-5½x6	743		535	200-2100	Ful 5C72	10	Own 6-23	SF	T	4.7-11.5
6-609	188	Opt	60000	^17510	12.00/20D	13.00/20	Wau 145GKB	6-5¼x6	779	6.2	595	240-2400	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
(D) 6-606D	188	Opt	60000	^18180	12.00/20D	13.00/20	GMC 6-71	6-4¼x5	426	16.0	600	200-2000	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
(D) 6-609D	188	Opt	60000	^18010	12.00/20D	13.00/20	Cum NHB	6-5½x6	743	16.0	535	200-2100	Ful 10A1120	10	Own 6-33	SF	T	5.7-8.53
G6-406	189		40000	^14100	11.00/20D		Int RD-450	6-4⅝x5	450	6.2	387	182-3000	Ful 5C65	10	Own 6-23	SF	T	4.7-11.5
(D) R6-404D	229	Opt	40000	^15650	10.00/20D		GMC 4-71	4-4½x5	284	16.0	385	150-2100	Ful R95C	20	Own 6-23	SF	T	4.7-11.5
(D) R6-406D	229	Opt	40000	^16200	10.00/20D		GMC 6-71	6-4¼x5	426	16.0	600	200-2000	Ful R95C	20	Own 6-23	SF	T	4.7-11.5
L6-408	217	Opt	40000	^14760	10.00/22D		Wau 145GK	6-5¼x6	779	6.2	595	216-2000	Ful R95C	20	Own 6-23	SF	T	4.7-11.5
(D) L6-406D	217	Opt	40000	^15260	10.00/22D		GMC 6-71	6-4¼x5	426	16.0	600	200-2000	Ful R95C	20	Own 6-23	SF	T	4.7-11.5
(D) L6-409D	217	Opt	40000	^15430	10.00/22D		Cum NHB	6-5½x6	743	16.0	535	200-2100	Ful R95C	20	Own 6-23	SF	T	4.7-11.5
Kenworth (D) +522	191	255	43000	14100	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	T R200P++	2F	H	5.91-9.76
(D) +523-4R	190	255	43000	15200	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SQW	WF	L	5.67-8.20
(D) +524-4R	190	255	61000	16400	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SW456P	WF	L	4.72-8.20
(D) 548-4R	201		67000	20150	12.00/24	12.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	SFD-4600	B2F	L	8.07-11.6
(D) 552-6	178		54000	22500	13.00/24	13.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim SFD4600	B2F	L	8.07-11.5
(D) +825-4R	190	255	43000	14400	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241	12	Tim GSWQFR2	WF	L	5.67-8.20
+826-4R	175‡	255	43000	14200	10.00/20	11.00/22	HS 590GV3	6-5x7	590	6.6	490	232-2830	Fu 5C720	15	Tim SQD	B2F	L	4.58-9.21
(D) 848-4R	210‡	234‡	98000	20000	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD4600	B2F	L	8.07-11.6
(D) 849-4R	210‡	234‡	98000	21700	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD4600	B2F	L	8.07-11.6
(D) *850-4R	210‡	234‡	98000	21900	12.00/24	14.00/24	Cum NHB600	6-5½x6	743	16.0	535	200-2100	BL 8241^	12	Tim SFD4600	B2F	L	8.07-11.6
Oshkosh W-825-6X6	178	Opt	45000	12500	11.00/20	11.00/20	Cum R8602	6-4⅞x5¾	602		484	218-2600	Own W-825	5	Tim SFD3020	2F	L	** -7.2
W-826-6X6	178	Opt	45000	19000	11.00/20	11.00/20	Cum HB600	6-4½x6	672		500	150-2000	Own W-826	5	Tim SFD3020	2F	L	** -5.6
**W1602	Opt	Opt	95000		14.00/24D	14.00/24	Optional						△		Tim SD472	2F	L	
**WA1600	Opt	Opt	60000		11.00/24D	12.00/24	Optional						△		Tim SFD4600	2F	L	
Peterbilt (D) 350	193	Opt	38000		10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SW-3456	WF	R	6.16-6.80
(D) 360	198	Opt	36000		10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SW-459	WF	R	6.16-6.80
(D) 381	194	Opt	44000		10.00/20D	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	Tim SFD4600	2F	R	** -10.16
(D) 350 (coe)	135	Opt	36000		10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	SW 3456	WF	R	6.16-6.80
(D) 351	190	Opt	36000	13200	10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8045	12	Tim SW3458			6.16-7.35
(D) 360 (coe)	135	Opt	36000		10.00/20	11.00/22	Cum NHB600	6-5½x6	743	17.0	500	200-2100	Spi 8041	12	SW 459	WF	R	6.16-6.80
Reo F-226	150	203	42000	9875	9.00/20	10.00/20	Own 331‡	6-3⅞x4½	331	6.4	264	140-3200	Cla 205V	5	Tim SLD	F2	T	7.67-9.33
F-506	150	203	42000	10090	9.00/20	10.00/20	Own 160•	6-4½x4½	331	6.7	290	160-3200	Cla 290V	5	Tim SLD	F2	T	7.67-9.33
F-536		200	48000	11600	10.00/20	11.00/22	Own 160	6-4½x4½	427	6.4	348	160-2800	Cla 290V	5	Tim SQD	F2	T	7.54-9.21
F-506M	150	203	47000	11765	11.00/20†	11.00/20†	Own 160	6-4½x4½	331	6.7	290	160-3200	Cla 290V	5	Tim SLD	F2	T	** -9.33
F-226 (6x6)	150	203	42000	11325	9.00/20	10.00/20	Own 331‡	6-3⅞x4½	331	6.4	264	140-3200	Cla 205V	5	Tim SLD	F2	T	** -7.66
F-536-M	155	200	52000	12050	11.00/20†	11.00/22†	Own 160•	6-4½x4½	331	6.7	290	160-3200	Cla 290V	5	Tim SQD	F2	T	** -8.21
F-50 (6X2)	140	185	40000	9890	9.00/20	10.00/20	Own 160•	6-4½x4½	331	6.7	290	160-3200	Cla 265V	5	Tim SQTT335	HFd	H	6.63-8.51

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

1956 TRUCK SPECIFICATIONS—*concluded*

MAKE AND MODEL	WHEELBASE: Minimum Standard	WHEELBASE: Maximum Standard	Gross Vehicle Weight for Normal Service	Chassis Weight (See definition)	TIRE SIZES (D-dual rear S-single rear): Standard Front and Rear	TIRE SIZES: Maximum Authorized Tire Size (Duals unless noted)	ENGINE DETAILS: Make and Model	No. of Cylinders, Bore and Stroke	Displacement	Comp. Ratio	Torque lb. ft.	Max. Brake H.P. at R.P.M. Given	TRANSMISSION: Make and Model	Forward Speeds	REAR AXLE: Make and Model	Gear and Type	Drive and Torque	Gear Ratio Range_In_High
Six-Wheelers—Cont'd																		
Reo—Cont'd																		
F-80T (6X2)	140	140	40000	10140	9.00/20	10.00/20	Own 160[■]	6-4½x4½	331	6.7	290	160-3200	Cla 265V	5	Tim SQTT335	HFd	H	6.63-8.51
A-820	139	199	40000	10940	9.00/20	10.00/20	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SQTT235+	HF2	H	6.43-8.91
A-823	133	151	40000	11205	9.00/20	10.00/20	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SQTT335	HFd	H	6.63-8.51
A-830	151	199	42000	11285	9.00/20	10.00/20	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SLD	F2	T	6.41-9.33
A-833	157	187	42000	11735	9.00/20	10.00/20	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SLDD	F2	T	6.41-9.33
A-730	151	199	48000	12545	10.00/20	11.00/22	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SQD::	F2	T	6.44-9.21
A-733	157	187	48000	13035	10.00/20	11.00/22	Own OV195[▼]	8-3⅞x4½	390	7.3	345	195-3200	Spi 6352	5	Tim SQDD::	F2	T	6.44-9.21
Truckstell																		
(C) F600 4R	152	221	28000	♣7960	7.50/20	8.25/20	Ford	8-3.1x3⅝	239	6.8	194	106-3500	Ford++	12	Ford	HF	R	** -6.8
(C) F700 4R	153	225	32000	♣8980	7.50/20	9.00/20	Ford	6-3½x4.4	254	6.8	212	112-3500	Ford++	12	Ford	HF	R	** -7.2
(C) F750 4R	153	225	34000	♣9350	8.25/20	9.00/20	Ford	8-3½x3½	279	7.1	244	145-3800	Ford++	15	Ford	HF	R	** -7.2
(C) F800 4R	153	225	40000	♣10170	9.00/20	10.00/20	Ford	8-3.8x3½	317	7.1	284	155-3900	Ford++	15	Ford	SF	R	** -7.17
(C) F900 4R	153	225	48000	♣11640	10.00/20	11.00/20	Ford	8-3.8x3½	317	7.1	284	155-3900	Ford++	15	Ford	SF	R	** -7.17
(C) C5403 4R	126	204	28000	♣7800	7.50/20	9.00/20	Chev.	6-3⅞x3½	235	6.7	193	105-3600	Chev.++	12	Chev.	HF	R	** -6.17
(C) C6103 4R	160	229	30000	♣7650	7.50/20	9.00/20-10	Chev.	6-3⅞x3½	235	7.1	200	108-3500	Chev.++	12	Chev.	HyF	R	** -6.17
Ward La Fr. D1T‡	180	220	39500		10.00/20	11.00/20	Con T8427	6-4⅞x4⅞	427		340	152-2600	Fu 5A43♣♣	15	Tim SD3010P	2F	L	** -8.27
D3T♣♣	180	220	39500		10.00/20	11.00/20	Con R6572	6-4⅝x5⅛	572		440	198-2600	Fu 5C65♣♣	15	Tim SD3010P	2F	L	** -7.50
D3ST♣♣	180	220	39500		10.00/20	11.00/20	Con R6602	6-4⅝x5⅛	602		463	206-2600	Fu 5C65♣♣	15	Tim SD3010P	2F	L	** -7.50
(D) D5T♣♣	180	220	42000		11.00/20	11.00/20	Cum HB600	6-4½x6	672		500	150-1800	Fu 5C72♣♣	15	Tim SD3010P	2F	L	** -6.84
(D) D5RT♣♣	180	220	42000		11.00/20	11.00/20	Cum HRB600	6-5½x6	743		540	165-1800	Fu 5C72♣♣	15	Tim SD3010P	2F	L	** -6.84
(D) D5NT♣♣	180	220	42000		11.00/20	11.00/20	Cum NHB600	6-5½x6	743		540	200-2100	Fu 5C72♣♣	15	T SW3012PA	WF	L	** -6.17
White-Freightliner WF84	196			13470	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	12	Tim SQW	WF	H	** -6½
WF64T	156	248		13240	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Fu R95C	10	Tim SQW	WF	H	** -6½
WF6542T	115	120		10560	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	8	Tim R330	SFD	H	4.77-6.38
WF7564T	156	248		13230	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Fu R95C	10	Tim SQW	WF	H	** -6½
WF5842T	115	120		10640	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	8	Tim R330	SFD	H	4.77-6.38
WF584◁	115½			12030	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Ful R95C	10	Tim R230	SFD	H	** -5.54
WF6561	196			13440	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	12	Tim SQW	WF	H	** -6½
WF7564	196			13170	10.00/20		Cum NHB	6-5½x6	743	13.0	575	200-2100	Spi 8041	12	Tim SQW	WF	H	** -6½

For references and abbreviations see page 154

For Directory of the Truck Manufacturers listed above, see page 286

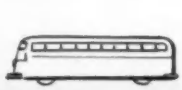
Operating Facts of U. S. Government Fleets

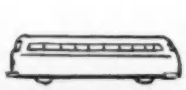
As reported by the General Services Administration for year ending June 30, 1955

Item	Department or Agency	All Automobiles	Station Wagons	Ambulances	Buses	TRUCKS—GROSS VEHICLE WEIGHT: 12,499 and Less (1 Ton)	12,500 to 16,999 (1½-2½ Ton)	17 000 and Over (3 Ton and Over)	Total Vehicles
Number of Vehicles	Civilian Agencies	20,241	1,178	406	1,106	53,348	13,423	5,220	94,922
	Dept. of Defense	15,703	763	2,826	5,566	52,585	27,942	10,891	116,276
	All Vehicles	35,944	1,941	3,232	6,672	105,933	41,365	16,111	211,198
Avg. Miles Per Vehicle Per Year	Civilian Agencies	11,603	9,447	5,053	12,443	9,316	6,348	8,551	9,366
	Dept. of Defense	11,688	4,868	4,536	10,487	8,896	4,716	5,911	8,000
	All Vehicles	11,641	7,575	4,596	10,780	9,098	5,211	6,727	8,529
Avg. Miles Per Gallon of Fuel	Civilian Agencies	14.7	13.8	10.8	5.8	9.8	6.9	5.5	.....
	Dept. of Defense	16.5	18.0	9.6	5.5	11.7	7.0	4.6	.....
	All Vehicles	15.4	14.7	9.7	5.6	10.7	6.9	5.0	.....
Total Cost[1] Per Mile	Civilian Agencies	$.0386	$.0452	$.0932	$.1106	$.0684	$.1276	$.1379	.....
	Dept. of Defense	.0452	.0485	.1031	.0943	.0580	.1101	.1150	.....
	All Vehicles	$.0415	$.0461	$.1018	$.0971	$.0632	$.1166	$.1240	.....
Operation Cost Per Mile	Civilian Agencies	$.0245	$.0259	$.0476	$.0635	$.0304	$.0510	$.0627	.....
	Dept. of Defense	.0189	.0191	.0347	.0395	.0228	.0355	.0407	.....
	All Vehicles	$.0220	$.0242	$.0363	$.0436	$.0266	$.0412	$.0494	.....
Maintenance Cost Per Mile	Civilian Agencies	$.0141	$.0193	$.0456	$.0471	$.0380	$.0768	$.0752	.....
	Dept. of Defense	.0263	.0294	.0684	.0548	.0352	.0746	.0743	.....
	All Vehicles	$.0195	$.0219	$.0655	$.0535	$.0368	$.0754	$.0746	.....
Number of Vehicles Disposed of	Civilian Agencies	3,156	248	23	140	5,464	1,036	479	10,546
	Dept. of Defense	.....	.....	.....	.....	.....	.....	.....	.....
	All Vehicles	.....	.....	.....	.....	.....	.....	.....	.....

(1)—Includes Operation and Maintenance.

BUSES 1956





CITY AND INTERCITY

★ ★ ★ ★

Line Number	BUS MAKE AND MODEL	GENERAL: Passenger Rating	GENERAL: Type (City Service, Parlor, etc.)	GENERAL: Standard Wheelbase (In.)	GENERAL: Overall Length (In.)—Bumper to Bumper	GENERAL: Inside Length (In.)—Passenger Compartment	GENERAL: Tread (In.)—Front and Rear	GENERAL: Complete Vehicle Weight—Dry (Lb.)	GENERAL: Standard Tire Size (In.)—Front and Rear	ENGINE: Make and Model	ENGINE: Cycle and Fuel	ENGINE: Location	ENGINE: Number of Cylinders—Bore and Stroke (In.)	ENGINE: Displacement (Cu. In.)	ENGINE: Rated Horsepower (A.M.A.)	ENGINE: Maximum Brake Hp. at Governed R.P.M.	ENGINE: Maximum Net Torque (Lb. Ft.) at Specified R.P.M.	ENGINE: Compression Ratio—to 1	ENGINE: Compression Pressure—(Lb.) at Specified R.P.M.	ENGINE: Valve Arrangement	Oiling System: Pressure to—
1	Beck Airglide Mainliner	37	IC	228	420	358	80¼–71½	18500	11.00/20	Cum JT-6	4-D	R	6-4½x5	401	40.6	175-2500	400-1700	15.5		I	abcd
2	Semi-Deck & Half	41	IC	228	420	376	80¼–72	20000	11.00/20	Cum JT-6	4-D	R	6-4½x5	401	40.6	175-2500	400-1700	15.5		I	abcd
3	Deck & Half	45	IC	256	480	436	80¼–72	28000	11.00/22	Cum NRT-6	4-D	R	6-5½x6	743	63.1	300-2100	800-1400	12.0		I	abcd
4	Crown A-501-10	37-41	IC	200½	384	353½	80½–72	18500	10.00/20	Int 501	4-G	UF	6-4½x5½	501	48.6	212-3000	445-1400	6.50		I	acd
5	A-590-10	33-41	IC	200½	384	353½	80½–72	18500	10.00/20	HS 590BH1	4-G	UF	6-5x5	590	60.0	232-2800	490-1600	6.70		I	acdef
6	A-501-11	37-45	IC	232	419½	388	80½–72	19200	11.00/20	Int 501	4-G	UF	6-4½x5½	501	48.6	212-3000	445-1400	6.50		I	acd
7	A-590-11	37-45	IC	232	419½	388	80½–72	19200	11.00/20	HS 590BH1	4-G	UF	6-5x5	590	60.0	232-2800	490-1600	6.70		I	acdef
8	A-779-11	37-45	IC	232	419½	388	80½–72	20500	11.00/22	HS 190-2	4-G	UF	6-5½x6	779	29.8	246-2400	640-1400	6.10		I	acdef
9	AD-743-11	37-45	IC	232	419½	388	80½–72	21200	11.00/22	Cum NHHB600	4-D	UF	6-5½x6	743	27.0	210-2100	570-1600	15.5		I	abcd
10	Fitzjohn FTG Cityliner	29-31	CS	155¼	323¼	277	81¼–74	12000	8.25/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
11	FTG Cityliner	29-31	CS	155¼	323¼	277	81¼–74	12400	8.25/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
12	FTG Cityliner	33-35	CS	182½	351	304⅜	81¼–74	12750	9.00/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
13	FTG Cityliner	33-35	CS	182½	351	304⅜	81¼–74	13150	9.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
14	FTD Cityliner	33-35	CS	182½	351	304⅜	81¼–74	13800	9.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.8	150-2500	360-1500	15.5		I	abcd
15	FTG Cityliner	37-39	CS	210¼	378¾	332½	81¼–74	13900	10.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
16	FTD Cityliner	37-39	CS	210¼	378¾	332½	81¼–74	14550	10.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.8	150-2500	360-1500	15.5		I	abcd
17	FSG Suburbanliner	29	Sub	155¼	325¼	277	81¼–74	12500	8.25/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
18	FSG Suburbanliner	29	Sub	155¼	325¼	277	81¼–74	12900	8.25/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
19	FSG Suburbanliner	33	Sub	182½	351	304⅜	81¼–74	13250	9.00/20	Her JXLD	4-G	TR	6-4x4½	339	38.4	131-3000	272-1400	6.20		L	abcdg
20	FSG Suburbanliner	33	Sub	182½	351	304⅜	81¼–74	13650	9.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
21	FSG Suburbanliner	37	Sub	210¼	378¾	332½	81¼–74	14400	10.00/20	Her WXLD	4-G	TR	6-4½x4¾	404	43.3	140-2600	316-1400	6.50		L	ac
22	Roadrunner	33	P	201	384	324	80¼–71½	17650	10.00/20	Wau 140GKB	4-G	R	6-4½x5½	525	48.6	177-2600	425-1000	6.50		I	abcdfg
23	Roadrunner	33	P	201	384	324	80¼–71½	17750	10.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.8	150-2500	360-1500	15.5		I	abcd
24	Roadrunner	37	P	237	420	360	80¼–71½	18650	11.00/20	Wau 140GKB	4-G	R	6-4½x5½	525	48.6	177-2600	425-1000	6.50		I	abcdfg
25	Roadrunner	37	P	237	420	360	80¼–71½	18750	11.00/20	Cum JT8B	4-D	R	6-4½x5	401	40.8	165-2500	400-1800	15.5		I	abcd
26	Flxible 218B7	37	IC	218	410¾	338	80⅛–69⅝	15100	9.00/20	Bui FB320	4-G	R	6-3⅞x4⅛	320	37.8	144-3400	278-2200	6.30		I	acdf
27	182B1	25	IC	182	374¾	264	80⅛–69⅝	14600	9.00/20	Bui FB320	4-G	R	6-3⅞x4⅛	320	37.8	144-3400	278-2200	6.30		I	acdf
28	218F1	29	IC	218	410¾	301	80⅛–69⅝	15610	9.00/20	Fag FTC180	4-G	R	6-4¼x4⅝	404	43.3	162-2800	362-1600	7.50		I	abcd
29	218JBS1	29	IC	218	410¾	300	80⅛–69⅝	15455	9.00/20	Cum JBS600	4-D	R	6-4½x5	401	40.6	150-2500	360-1400	15.5		I	abcd
30	218GM1	29	IC	218	410¾	300	80⅛–69⅝		9.00/20	GM 4-71	2-D	R	4-4¼x5	284	28.9	150-2100	387-1600	16.0		I	abcd
31	228JTI-56	37	IC	228	419½	401½	80½–71½	18200	10.00/20	Cum JT600	4-D	R	6-4½x5	401	43.3	175-2500	405-1800	15.5		I	abcd
32	228F1-56	37	IC	228	419½	401½	80½–71½	18200	10.00/20	Fag FTC200	4-G	R	6-4⅝x5	451	45.9	200-2800	400-1600	7.28	155-250	I	abcd
33	Flxible-Twin Coach FT-30	36	CS	190¾	365	340	80⅝–72	14400	10.00/20	Fag FTC-180	4-G	UF	6-4¼x4⅝	404	43.3	180-2800	360-1600	7.50		I	
34	FT-33	40	CS	222	403	378	80⅝–72	15800	10.00/20	Fag FTC-200	4-G	UF	6-4⅝x5	451	45.9	200-2800	400-1600	7.28		I	
35	FT-35	44	CS	232½	420	402	80⅝–72	16600	10.00/20	Fag FTC-200	4-G	UF	6-4⅝x5	451	45.9	200-2800	400-1600	7.28		I	
36	FT-40	52	CS	274¾	480	462	80⅝–72	18500	11.00/20	Fag FTC-210	4-G	UF	6-4¼x5	477	48.6	210-2800	480-1600	7.08		I	
37	FT-40DL	52	CS	274¾	480	462	80⅝–72	18500	11.00/20	Fag FLDH600	4-D	UF	6-4½x5½	597	55.5	160-2225	455-1200	15.8	450-300	I	abcd
38	G.M.C. TGH3102	31	CS	180½	325⅝	287	81¼–75¼	9635	8.25/20	Own 270	4-G	TR	6-3⅞x4	270	34.3	124-3200	232-1000	7.50	165-1000	I	abcdfgh
39	TDH3714	37	CS	210½	369½	336	79¼–70⅛	16075	10.00/20	Own 4-71	2-D	TR	6-4¼x5	284	28.9	143-2100	375-1600	17.0	385-500	I	abcdfgh
40	TDH4512	45	CS	238⅜	420	389	78⅞–70⅛	17170	10.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
41	TDM4515	45	Sub	238⅜	420	389	78⅞–70⅛	19060	10.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
42	TDH5105	51	CS	281⅜	477	441	87¼–76⅛	18655	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
43	TDH5106	51	CS	281⅜	477	441	80⅞–70⅛	18445	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	172-2000	472-1200	17.0	385-500	I	abcdfgh
44	TDM5108	51	Sub	281⅜	477	441	80⅞–70⅛	20625	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
45	PD4104	41	P	261	420	390	78⅞–70⅛	19310	11.00/20	Own 6-71	2-D	TR	6-4¼x5	426	43.4	211-2000	574-1600	17.0	385-500	I	abcdfgh
46	Mack C41	41	CS	237½	396	366⅝	79⅛–70⅞	17500	10.00/20	Own END673	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
47	C47	45	CS	261½	420	390⅝	79⅛–70⅞	18200	10.00/20	Own END673	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
48	C49*	49	CS	289½	472½	443	79⅛–70⅞	19200	11.00/20	Own END673	4-D	TR	6-4⅞x6	672	57.0	170-2100	480-1200	16.6	530-1000	I	acdeh
49	Southern Coach S-45-DHC	45	CS	232⅞	419	404	80¼–72	18714	11.00/22	Cum NHHB600	4-D	UF	6-5½x6	743	63.0	200-2100	535-1200	15.5		I	abcdf
50	S-38-DHL	36	CS	194⅞	356½	341½	80¼–71½	14460	10.00/20	Fag FLDH600	D	UF	6-4⅞x5½	597	55.2	160-2400	452-1200	15.8		I	acdfgi
51	S-41-HF	41	CS	221⅝	391½	377½	80¼–72	15300	11.00/20	Fag FTC180	4-G	UF	6-4¼x4⅝	404	43.4	180-2400	360-1600	7.50		I	acdf
52	S-50-DH^	50	CS	275⅜	461½	447	86⅞–72	21310	11.00/22	Cum NHHB600	2-D	UF	6-5½x6	743	63.0	200-2100	535-1200	15.5		I	abcdf

ABBREVIATIONS

♦—Two used.
‡—Torque converter.
♦—Generator, Delco-Remy; starter, Auto-Lite.
*—Also available with ENDT-673 supercharged engine.
†—Front, 14⅜; rear, 15.
•—Hundred rpm.

^—Air suspension.
a—Main bearings.
b—Wrist pins.
c—Connecting rods.
d—Camshaft.
e—Accessory drive.
f—Valve lifters or rocker arms and shafts.
g—Timing gears or chain.
h—Air compressor.
i—Balancer shaft.
A—Air.
AL—Electric Auto-Lite Co.
BB—Borg & Beck.
Bos—American Bosch Div.
Bui—Buick Motor Div.
Ce—Centrifugal.
CIC—City and intercity service.
Cla—Clark Equipment Co.
CS—City service.
Cum—Cummins Engine Co.
D—Diesel fuel.
Do—Downdraft.
DR—Delco-Remy Div.
Ds—Drive shaft.
Fag—Fageol.
Fu—Fuller Mfg. Co.
G—Gasoline.
Gem—Gemmer Mfg. Co.
GH—G. M. Hydramatic.

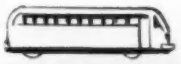
For Directory of Car Manufacturers listed above, see page 286

Intercity Passenger Miles Traveled, by Types of Transportation

As reported by National Association of Motor Bus Operators

Billions of Miles

Year	Total Intercity Travel	Automobiles	Public Carriers: Total	Railroads	Intercity Buses	Air Lines	Waterways
1948	355.6	287.4	68.2	36.0	24.3	6.2	1.7
1949	379.1	316.7	62.4	30.5	23.3	7.2	1.4
1950	398.9	337.3	59.6	27.5	22.3	8.6	1.2
1951	445.8	379.3	66.5	30.4	23.4	11.4	1.3
1952	477.7	410.3	67.4	30.0	22.6	13.4	1.4
1953	498.0	432.1	65.9	27.5	21.2	15.7	1.5
1954	511.1	448.0	63.1	24.7	19.0	17.7	1.7





★ ★ ★ ★

CITY AND INTERCITY

FUEL SYSTEM				ELECTRICAL SYSTEM			Gov-ernor			TRANSMISSION				Uni-versals		REAR AXLE			BRAKES				SPRINGS				RUNNING GEAR			
Carburetor or Injector Pump						Battery													Service			Hand	Front		Rear					
Make and Type	Size (In.)	Tank Capacity (Gal.)	Ignition System—Make	Generator and Starter—Make	Voltage and Amp. Hours Capacity	Type	Max. Governed Speed—M.P.H.	Clutch—Make and Size (In. diam.)	Make	No. of Forward Speeds	Low Speed Ratio—to 1	Type	Number	Size of Series	Make and Model	Standard Gear Ratio—to 1	Type of Applicator	Total Lining Area (Sq. In.)	Drum Diam. (In.)	Operates on—	Total Lining Area (Sq. In.)	No. of Leaves	Length and Width (In.)	No. of Leaves	Length and Width (In.)	Front Axle—Make	Steering Gear—Make	Outside Diameter of Min. Turn. Circle (Ft.)	Line Number
Cum		120		LN	12–155	M	68	LR 15	Fu	4	4.43	M	2	1600	Tim L110	4.44	A		16½	Ds		△		△		Tim	Ro		1
Cum		150		LN	12–155	M	65	LR 15	Fu	4	4.43	M	2	1600	Tim Q110	4.62	A		16½	Ds		△		△		Tim	Ro		2
Cum		150		LN	12–155	M	65	Lg 17	Spi	4	5.19	M	2	1700	Tim R110	4.11	A		16½	Ds		△		△		Tim	Ro		3
Hol Do	11¼	70	DR	♦	12–158	Su	Var	LR 15	Fu	5	8.08	M	2	1600	Tim L110P	5.29	A	704	16½	Ds	65	11	50–4	17	60–4	Tim	Ro	70	4
Hol Do	11¼	70	DR	♦	12–158	Su	Var	Lg 15½	Fu	5	8.08	H	2	1700	Tim Q110P	4.63	A	704	16½	Ds	65	11	50–4	17	60–4	Tim	Ro	70	5
Hol Do	11¼	70	DR	♦	12–158	Su	Var	LR 15	Fu	5	8.08	M	2	1600	Tim L110P	5.29	A	704	16½	Ds	65	11	50–4	17	60–4	Tim	Ro	78	6
Hol Do	11¼	70	DR	♦	12–158	Su	Var	Lg 15½	Fu	5	8.08	H	2	1700	Tim Q110P	4.63	A	704	16½	Ds	65	11	50–4	17	60–4	Tim	Ro	78	7
Zen Up	2	70	DR	♦	12–158	V	Var	Lg 17	Fu	5	7.33	M	2	1700	Tim R110P	4.11	A	704	16½	Ds	65	12	50–4	18	60–4	Tim	Ro	78	8
Cum		70	AL	♦	12–158		Var	Lg 17	Fu	5	7.33	M	2	1700	Tim R110P	4.11	A	704	16½	Ds	65	12	50–4	18	60–4	Tim	Ro	78	9
Zen Up	15¼	60	DR	DR	12–150	Ce	53	BB 13	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	14	54–3	14	60–3	Tim	Ro	57	10
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	14	54–3	14	60–3	Tim	Ro	57	11
Zen Up	15¼	60	DR	DR	12–150	Ce	53	BB 13	Cla	3	4.00	M	2	1600	Tim 56431W	6.16	A	586	14½	Ds	85	14	54–3	14	60–3	Tim	Ro	65	12
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	14	54–3	14	60–3	Tim	Ro	65	13
Cum		60		LD	12–150♣	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	15	54–3	15	60–3	Tim	Ro	65	14
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	15	54–3	15	54–3	Tim	Ro	73¾	15
Cum		60		LD	12–150♣	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56431W	6.16	A	586	14½	Ds	85	15	54–3	15	60–3	Tim	Ro	73¾	16
Zen Up	15¼	60	DR	DR	12–150	Ce	53	BB 13	Cla	3	4.06	M	2	1600	Tim 56431W	6.16	A	586	14½	Ds	85	14	54–3	14	54–3	Tim	Ro	57	17
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	14	54–3	14	54–3	Tim	Ro	57	18
Zen Up	15¼	60	DR	DR	12–150	Ce	53	BB 13	Cla	3	4.06	M	2	1600	Tim 56431W	6.16	A	586	14½	Ds	85	14	54–3	14	54–3	Tim	Ro	65	19
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	14	54–3	14	54–3	Tim	Ro	65	20
Zen Do	15¼	60	DR	LD	12–150	Ce	53	Lg 14	Cla	3	4.06	M	2	1600	Tim 56434W	6.16	A	586	14½	Ds	85	15	54–3	15	54–3	Tim	Ro	77¾	21
Zen Do	15¼	142	LD	LD	12–150	Ce	68	Lg 14	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	684	16½	Ds	137	△		△		Tim	Ro	71	22
Cum		142		LD	12–150♣	Ce	68	Lg 14	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	684	16½	Ds	137	△		△		Tim	Ro	71	23
Zen Do	15¼	142		LD	12–150	Ce	68	LR 15	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	684	16½	Ds	137	△		△		Tim	Ro	80	24
Cum	15¼	142		LD	12–150♣	Ce	68	LR 15	Cla	4	4.88	M	2	1600	Tim L110	4.44	A	684	16½	Ds	137	△		△		Tim	Ro	80	25
Str Do		80	DR	DR	12–160	Ce	63	Spi 13	Spi	5	4.62	M	2	1500	Tim H110	6.17	A	610	16½	Ds	45	12	52–3	15	56–3	Tim	Ro	72	26
Str Do		80	DR	DR	12–160	Ce	63	Spi 13	Spi	5	4.62	M	2	1500	Tim H110	6.17	A	610	16½	Ds	45	12	52–3	15	56–3	Tim	Ro	65	27
Hol Do		80	DR	DR	12–160	Ce	72	Spi 14	Spi	5	4.62	M	2	1500	Tim H110	5.28	A	610	16½	Ds	45	12	52–3	15	56–3	Tim	Ro	72	28
Cum		80	DR	DR	12–160	Ce	65	Spi 14	Spi	5	4.62	M	2	1500	Tim H110	5.28	A	610	16½	Ds	45	12	52–3	15	56–3	Tim	Ro	72	29
GM		80	DR	DR	12–160	Ce	66	Lg 15½	Spi	5	5.08	M	2	1500	Tim H110	4.62	A	610	16½	Ds	45	12	52–3	15	56–3	Tim	Ro	72	30
Cum		120		DR	12–160	Ce	67	Spi 14	Spi	5	4.50	M	2	1600	Tim L110	5.28	A	792	16½	Ds	45	△		△		Tim	Ro	62¾	31
Hol Do		120	DR	DR	12–160	Ce	64	Spi 14	Spi	5	4.50	M	2	1600	Tim L110	6.16	A	792	16½	Ds	45	△		△		Tim	Ro	62¾	32
Hol Do		80	DR	LD	12–160	Ce	28•	None	Spi‡		5.43	H	2	1600	Tim L110	6.16	A	844	16½	Ds	63	12	56–4	13	60–4	Tim	Ro	69	33
Hol Do		125	DR	LD	12–160	Ce	28•	None	Spi‡		5.43	H	2	1600	Tim Q110	6.16	A	844	16½	Ds	63	13	56–4	13	60–4		Ro	67½	34
Hol Do			DR	LD	12–160	Ce	28•	None	Spi‡		5.43	H	2	1600	Tim Q110	6.16	A	844	16½	Ds	63	12	60–4	13	64–4	Tim	Ro	69½	35
Hol Do			DR	LD	12–160	Ce			Spi‡		5.43	H	2	1600	Tim R110	6.16	A	844	16½	Ds	63	13	60–4	15	64–4	Tim	Ro	79½	36
Ros		125		LN	12–160	Ce	23•	None	Spi‡		5.43	H	2	1600	Tim R110	6.17	A	844	16½	Ds	63	13	60–4	15	64–4	Tim	Ro	79½	37
Zen Do	11½	60	DR	DR	12–150	Ce	52		GM	4	3.82	GH	2	1400	Cla R-1204	6.33	A	587	14½	Ds	28	10	52–3	11	59–3	Cla	Sag	66	38
Own		80		DR	12–175♣	Ce	46	Own 15	GM‡	If		H	2	1600	Tim 57620WX2	5.16	A	646	14½	Ds	69	△		△		Tim	Sag	70	39
Own		80		DR	12–175♣	Ce	48	Own 15	GM‡	If		H	2	1700	Tim 58620WX1	4.71	A	705	14½	Ds	104	△		△		Tim	Sag	78	40
Own		80		DR	12–175♣	Ce	61	Lg 17	Spi	4	4.36	M	2	1700	Tim 58620WX1	3.88	A	705	14½	Ds	104	△		△		Tim	Sag	78	41
Own		80		DR	12–175♣	Ce	45	Own 15	GM‡	If		H	2	1700	Tim 58621WX1	5.16	A	882	14½	Ds	104	△		△		Tim	Sag	82	42
Own		80		DR	12–175♣	Ce	45	Own 15	GM‡	If		H	2	1700	Tim 58620WX1	5.16	A	882	14½	Ds	104	△		△		Tim	Sag	81	43
Own		80		DR	12–175♣	Ce	58½	Lg 17	Spi	4	4.36	M	2	1700	Tim 59610WX1	4.13	A	882	14½	Ds	104	△		△		Tim	Sag	81	44
Own		100		DR	12–205	Ce	58½	Lg 17	Spi	4	3.86	M	2	1700	Tim 59600WX1	4.13	A	784	14½	Ds	125½	△		△		Tim	Ro	94	45
Bos	BB	75			12–200		21•	Spi 16	Spi‡	If		H	2	1700	Own RAS402	Var	A	784	15	Ds	139	13	62–3½	16	62–4	Own	Gem	69	46
Bos	BB	75			12–200		21•	Spi 16	Spi‡	If		H	2	1700	Own RAS402	Var	A	784	15	Ds	139	13	62–3½	16	62–4	Own	Gem	72	47
Bos	BB	75			12–200		21•	Spi 16	Spi‡	If		H	2	1700	Own RAS402	Var	A	843	15	Ds	139	12	62–4	15	62–4	Own	Ro	72	48
Cum		115		Op	12–168	Ce	41		Spi‡	If		H	2	1700	Tim R110WX8	6.83	A	798	16½	Ds	126	13	62–3½	16	70–4	Tim	Ro	84½	49
Ros		115		Op	12–168		41	Spi 14	Spi‡	If		H	2	1600	Tim L110P	6.16	A	622	16½	Ds	101	11	62–3½	12	70–4	Tim	Ro	71½	50
Hol Do		115	Mal	Op	12–168	Su	41	Spi 14	Spi‡	If		H	2	1600	Tim Q110P	6.83	A	685	16½	Ds	101	12	62–3½	14	70–4	Tim	Ro	80	51
Cum		115		Op	12–168	Ce	41	Spi 16	Spi‡	If		H	2	1700	Tim R110W	6.83	A	904	16½	Ds	126	△		△		Tim	Ro	82½	52

GM—General Motors Corp.
H—Hydraulic.
Her—Hercules Motor Corp.
Hol—Holley Carburetor Co.
HS—Hall Scott.
I—Valve in head.
IC—Intercity service.
If—Infinite.
Int—International Harvester Co.
L—Valves in side.
LD—Leece-Neville (alternator); Delco-Remy (starter).
Lg—Long Mfg. Div.
LN—Leece-Neville Co.
LR—Lipe Rollway Corp.
M—Mechanical.
Mal—Mallory.
Op—Optional.
P—Parlor.
R—Rear.
Ro—Ross Gear and Tool Co.
Ros—Roosa-Master.
Sag—Saginaw Steering Gear Div.
Spi—Spicer Mfg. Div.
Str—Stromberg Carburetor Div.
Su—Suction.
Sub—Suburban service.
Tim—Timken Detroit Axle Co.
TR—Transverse in rear.
UF—Under floor.
Up—Updraft.
V—Vacuum.
Var—Variable.
Wau—Waukesha Motor Co.
Zen—Zenith Carburetor Div.

For Directory of Car Manufacturers listed above, see page 286

Percentage Distribution of Intercity Travel

As reported by National Association of Motor Bus Operators

Year	Total Intercity Travel	Automobiles	Public Carriers				
			Total	Railroads	Intercity Buses	Air Lines	Waterways
1948	100.0	80.0	19.2	10.1	6.9	1.7	0.5
1949	100.0	83.5	16.5	8.1	6.1	1.9	0.4
1950	100.0	85.0	15.0	6.9	5.6	2.2	0.3
1951	100.0	85.3	14.9	6.8	5.2	2.6	0.3
1952	100.0	85.9	14.1	6.3	4.7	2.6	0.3
1953	100.0	86.8	13.2	5.5	4.3	3.1	0.3
1953	100.0	86.8	13.2	5.5	4.3	3.1	0.3
1954	100.0	87.7	12.3	4.8	3.7	3.5	0.3

TRACTORS 1956





WHEEL TYPES ★ ★ ★ ★ ★

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Wheelbase (In.)	Minimum Turning Radius Outside (Ft.)	Ground Clearance (In.)	Shipping Weight with Rubber Tires (Lb.)	TREAD (In.): Minimum	TREAD (In.): Maximum	DRAWBAR: Lateral Adjustment (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width (In.)	OVERALL DIMENSIONS: Height—To Highest Point (In.)	WHEELS: Standard Equipment	WHEELS: STEEL Diam. and Face: Front (In.)	WHEELS: STEEL Diam. and Face: Rear (In.)	WHEELS: TIRE SIZE: Front (In.)	WHEELS: TIRE SIZE: Rear (In.)	HP. RATING: Belt	HP. RATING: Drawbar	Nebraska Test Number	Power Take-off	Number of Forward Speeds	Number of Reverse Speeds	Travel Speeds at Normal Governed Engine R.P.M. (M.P.H.) with Standard Wheels: First	Second	Third
1	Allis-Chalmers 1B	57 1/8	7	12 7/8	2365	40 1/2	52 1/2		11 1/2	97 1/2	52 5/8	54 1/2	RT			5.00/15	9/24	22.87	18.00		Op	3	1	3.50	5.30	10.0
2	B	73 1/8	7 3/4	21 3/4 ‡	2060	40 1/2	52 1/2	22 1/4	12 1/2	110 1/4	52 1/2	62 3/4	RT			4.00/15	9/21	22.87	19.51	302	Op	3	1	2.75	4.25	8.50
3	CA	81 1/8	7 1/2	22 1/2	3000	52	80	14 1/2	14	124 1/2	67 1/2 ▼	76 3/8	RT			5.00/15	10/24	26.62	23.55	453	St	4	1	2.00	3.50	4.50
4	G	68 1/2	6 1/2	17 5/8	1295	36	64	7 1/8	13	116	36 ▼	55 1/4	RT			4.00/12	6/30	10.91 •	9.59 •	398		4	1	1.60	2.26	3.57
5	WD-45	88	8 1/2	28 1/4	4465	56	90	8 1/4	(g)	128	74 1/8 ▼	81 1/2	RT			5.50/16	12.00/28	45.27	40.01	498	St	4	1	2.40	3.75	5.00
6	WD-45	88 1/4	8	29 1/2	4730	55 1/8	90 1/8	8 1/4	(g)	128 1/8	74 1/8	89	RT			5.50/16	12.00/28	45.42	40.42	563	St	4	1	2.40	3.78	5.03
7	Brockway 49D	76 1/2	10 1/4	20	3600	48	76	28 1/2	16	115	63	62 1/2	RT			6.00/16	11/28	35.00	32.00		St	4	1	2.16	3.34	4.71
8	49G	76 1/2	10 1/4	20	3600	48	76	28 1/2	16	115	63	62 1/2	RT			6.00/16	11/28	31.75	26.00		St	4	1	2.16	3.34	4.71
9	49K	76 1/2	10 1/4	20	3600	48	76	28 1/2	16	115	63	62 1/2	RT			6.00/16	11/28	27.00	24.00		St	4	1	2.16	3.34	4.71
10	Case S	66	10			46		18	13	108 1/2	56 1/4	51 ▼	Op	25x4	42x8	5.00/15	11/26			NT	Op	4	1	2.50	3.50	5.00
11	SC	82 1/2	Piv			44	80	17	16 3/4	133	74 1/2	56 ▼	Op	24 5/8 x4	48x21 1/2	5.00/15	10/38			367	Op	4	1	2.50	3.50	4.75
12	SI	85 3/4	12			48 1/2		N	15 1/2	110 3/4	61.9	51 1/4 ▼	RT			6.00/16	12.00/24			NT	Op	4	1	2.52	3.57	4.93
13	LA	82	13			59 1/2		33 1/4	15	140	72 1/2	61 1/2 ▼	Op	30x6	48x12	7.50/18	14/30			480	Op	4	1	2.50	3.33	4.33
14	VAC-14	77				48	88	16	15 1/4	114 5/8	80 1/4	58 ▼	RT			5.00/15	11/28					4	1	2.25	3.00	4.00
15	500 Diesel	87 3/4				53 3/4	60 3/4	26 3/8	13	144 1/4	75 1/4	61 1/4 ▼	RT			7.50/16	14/30			508	Op	4	1	2.61	3.58	4.76
16	400	82	10 1/2	17 5/8		52	64	20 1/4	17 1/4	133	66 1/8	69	RT			6.00/16	13/30			NT	Op	8	2	1.30	1.80	2.50
17	410	82	10 1/2	17 5/8		52	64	20 1/4	17 1/4	133	66 1/8	69	RT			6.00/16	13/30			NT	Op	8	2	1.30	1.80	2.50
18	401	91 1/2	8 1/2			52	108	20 1/4	20 1/4	133	85 1/4	93 1/2 ▼	RT			6.00/16	12/38			NT		8	2	1.30	1.90	2.60
19	411	91 1/2	8 1/2			52	108	20 1/4	20 1/4	133	85 1/4	93 1/2 ▼	RT			6.00/16	12/38			NT		8	2	1.30	1.90	2.60
20	Cockshutt 20	79	7 1/2	24 1/2	2050	48	76	19 1/2	12 1/2	114	63	76	RT			5.00/15	10/24	30.45	26.74	474	Op	4	1	2.31	3.50	5.00
21	Rowcrop 30	84 3/4	8 1/2	23	3600	56	84	21 1/2	13	127	74 1/2	76	RT			5.50/16	10/38	32.95	28.43	382	Op	4	1	3.12	4.50	6.25
22	40	89 1/2	12	26	5000	56	84	23 1/4	14 1/2	134 1/2	75	79 1/2	RT			6.00/16	12/38	45.59	40.06	442	Op	6	2	1.62	2.75	3.62
23	50G	89 1/2	12	26	5860	56	84	23 1/4	14 1/2	134 1/2	75 1/4	79 1/2	RT			7.50/16	14/34	57.81	51.51	488	Op	6	2	1.52	2.57	3.53
24	50D	89 1/2	12	26	5890	56	84	23 1/4	14 1/2	134 1/2	75 1/4	79 1/2	RT			7.50/16	14/34	53.25	47.16	487	Op	6	2	1.52	2.57	3.53
25	D4	89 1/2	12	26		62	62	23 1/4	14 1/2	134 1/2	75	79 1/2	RT			6.00/16	12/38				Op	6	2	1.62	2.75	3.62
26	35 Deluxe	89 1/2	12	26	5000	56	58	23 1/4	14 1/2	134 1/2	75	79 1/2	RT			6.00/16	11/38				Op	6	2	1.62	2.75	3.62
27	Deere, John 50	90	8 1/2	24	4435	56	88	8 1/4	16 1/2	132 3/4	86 1/4	82 1/4	RT			5.50/16	11/38	30.97	27.49	(i)	(f)	6	1	1.50	2.50	3.50
28	60	90	8 1/2	26	5300	56	88	8 1/4	15 1/8	139	86 1/4	84 1/2	RT			6.00/16	12/38	41.57	38.94	(k)	(f)	6	1	1.50	2.50	3.50
29	60 Standard	80 1/2	13 1/2	24 1/4	5347	58	62	27	14 3/4	123 5/8	70 1/4	74 1/2	RT			6.00/16	14/30			(k)	(f)	6	1	1.50	2.50	2.75
30	60 Orchard	75 3/4	13 1/2	21 1/2	5332	54 1/2	58 1/2	27	12 1/2	125 1/2	71 1/2	57	RT			6.00/16	14/26			(m)	(f)	6	1	1.50	2.75	3.25
31	60 Hi-Crop	98 1/2	16 1/2	30 1/2	6685	60	90	21	14 1/2	98 1/2	102	152 1/2	RT			7.50/20	11/38			(k)	(f)	6	1	1.50	2.25	3.50
32	70	91	9 1/2	25 1/8	5945	60	88	8 1/4	16 1/4	136 1/4	86 1/4	88 1/4	RT			6.00/16	12/38	50.35	44.21	(n)	(f)	6	1	2.50	3.50	4.50
33	Diesel 70	91	9 1/2	25 1/8	6510	60	88	8 1/4	16 1/4	136 1/4	86 1/4	88 1/4	RT			6.00/16	12/38			528	(f)	6	1	2.50	3.50	4.50
34	70	91	9 1/2	25 1/8	5945	60	88	8 1/4	16 1/4	136 1/4	86 1/4	88 1/4	RT			6.00/16	12/38			506	(f)	6	1	2.50	3.50	4.50
35	70 Standard	82	14	25 1/8	6815	62	80	8 1/4	14 1/2	129	86 1/4	129	RT			6.50/18	15/30			493	(f)	6	1	2.50	3.50	4.50
36	70 Standard	82	14	25 1/8	6815	62	80	8 1/4	14 1/2	129	86 1/4	129	RT			6.50/18	15/30			514	(f)	6	1	2.50	3.50	4.50
37	Diesel 70 Stand.	82	14	25 1/2	7140	62	80	8 1/4	14 1/2	129	86 1/4	129	RT			6.50/18	15/30			528	(f)	6	1	2.50	3.50	4.50
38	70 Standard	82	14	25 1/8	6815	62	80	8 1/4	14 1/2	129	86 1/4	129	RT			6.50/18	15/30			506	(f)	6	1	2.50	3.50	4.50
39	70 Hi-Crop	98 1/2	16 1/2	30 1/2	7410	60	90		14 3/4	153	77 3/4	101	RT			6.00/16	12/38			(o)	St	6	1	2.50	3.50	4.50
40	M	70	8 1/2	21	2750	38	52	15 3/4	16	110	51	56	RT			5.00/15	9/24	21.42	19.19	387	St	4	1	1.62	3.12	4.25
41	MT	82 1/4	8 1/2	21		48	96	15 3/4	16 1/2	125 5/8	89 1/4	73 1/4	RT			5.00/15	9/34	21.57	18.77		St	4	1	1.62	3.12	4.25
42	MI	62	8			48	52		13 1/2	110	62	56 1/2	RT			5.00/15	9/24	21.42	19.19		St	4	1	1.62	3.12	4.25
43	80	85 1/4	15 1/2	18 1/2	7750	64 1/2	68 1/2	35 3/4	20 1/2	142 5/8	86	81	RT	30x6	14x54	7.50/18	15/34	67.64	61.76	567	Op	6	1	(p)	3.50	4.50
44	40	82 1/4	8 1/2	21	3000	48	96	10 1/2	14 1/2	130 5/8	88 1/2	72 1/8	RT			5.00/15	9/34	25.23	22.88	503	St	4	1	1.53	3.16	4.37
45	40-S	70 1/4	8 1/2	21	2880	38 3/4	54 1/4	25 1/2	12 1/4	115 3/4	55 1/2	70	RT			5.00/15	10/24	24.86	22.36	504	St	4	1	1.59	3.33	4.66
46	40-U	77 3/4	9	11	2600	41	56 1/2	6 1/4	11 1/2	125 1/2	55 1/2	64 1/4	RT			5.00/15	10/24			NT	Op	4	1			
47	20-H	80 3/4		32 1/2	3400	54	84	12	(q)	132	96 1/4	86	RT			6.50/16	10/38			NT	Op	4	1	1.63	3.13	4.25
48	420-S	70		21	2750	38 3/4	64 1/4	25 1/2	(r)	114 5/8	55 1/2	73 1/2	RT			5.00/15	9/24			NT	St	4	1	1.63	3.13	4.25
49	420-T	82 1/4		21	3000	48	96	16	(s)	130 5/8	88 1/2	76 1/2	RT			5.00/15	9/34			NT	St	4	1	1.63	3.13	4.25
50	420-U	77 3/4		14 1/2	2847	40 7/8	56 5/8	6	11 1/2	119 1/4	55 1/2	68 3/4	RT			5.00/15	10/24			NT	Op	4	1	1.63	3.13	4.25
51	420-V	72 7/8		26 1/4	3050	46	80	19 1/2	(t)	124	90 1/2	81 1/4	RT			5.00/15	10/34			NT	St	4	1	1.63	3.13	4.25
52	420-W	85		20 1/2	3000	48	98	6	16 1/2	136 1/2	85 3/4	74	RT			5.00/15	10/34			NT	Op	4	1	1.63	3.13	4.25
53	Earthmaster C	66	7	20	1520	36	64		14	98	51	61	RT			4.00/15	8/24	12.40	10.60		Op	3	1	2.27	3.24	5.18
54	CH	66	7	2 1/2	1545	36	64		16	100	51	64	RT			4.00/15	7/30	12.40	10.60		Op	3	1	2.54	3.64	5.81
55	CN	66	7	20	1505	38	58		14	98	48	61	RT			4.00/15	8/24	12.40	10.60		Op	3	1	2.27	3.24	5.18
56	CNH	66	7	24 1/2	1530	38	58		16	100	46	64	RT			4.00/15	7/30	12.40	10.60		Op	3	1	2.54	3.64	5.81
57	D	66	9	20	1600	56	84		14	98	71	61	RT			4.00/15	9/24	12.40	10.60		Op	3	1	2.40	3.43	5.48
58	DH	66	9	24 1/2	1610	56	84		16	100	71	64	RT			4.00/15	7/30	12.40	10.60		Op	3	1	2.54	3.64	5.81
59	Ferguson TO-35 Std.	72	8 1/2	12 5/8	2850	48	76	17 1/4	(u)	116 3/4	63 1/2	57	RT			4.00/19	10/28	29.33	23.76	564	St	6	2	1.18	1.77	3.24
60	TO-35 DeLuxe	72	8 1/2	12 5/8	2908	48	76	17 1/4	(u)	116 3/4	63 1/2	57	RT			6.00/16	11/28	29.33	23.76	564	St	6	2	1.23	1.84	3.37
61	Ford NCA620	74 1/2	8 11/16	20	2462	48	76				63 1/2 ▼	55 1/4	RT			5.50/16	10/28				N	4	1	3.58	4.00	6.33
62	NCA630	74 1/2	8 11/16	20	2662	48	76				63 1/2 ▼	55 1/4	RT			5.50/16	10/28				N	4	1	3.58	4.00	6.33
63	NCA640	74 1/2	8 11/16	20	2737	52	76	20	12	120 11/16	63 1/2 ▼	56 1/2	RT			5.50/16	11/28				St	4	1	3.81	4.89	6.73
64	NCA650	74 1/2	8 11/16	20	2825	52	76	20	12	120 11/16	63 1/2 ▼	56 1/2	RT			5.50/16	11/28				St	5	1	2.39	3.79	5.04
65	NCA660	74 1/2	8 11/16	20	2812	52	76	20	12	120 11/16	63 1/2 ▼	56 1/2	RT			5.50/16	11/28				St	5	1	2.39	3.79	5.04
66	NDA820	74 1/2	8 11/16	21 1/2	2637	48	76				65 1/2 ▼	55 1/2	RT			6.00/16	10/28				N					
67	NDA850	74 1/2	8 11/16	21 1/2	2984	52	76	20	13	120 11/16	65 1/2 ▼	57 1/2	RT			6.00/16	12/28				St	5	1	2.30	3.66	4.87
68	NDA860	74 1/2	8 11/16	21 1/2	2991	52	76	20	13	120 11/16	65 1/2 ▼	57 1/2	RT			6.00/16	12/28				St	5	1	2.30	3.66	4.87
69	NCB740	85 1/2	7 15/16	27 1/2	3079	56	84	20	9 1/2	132 11/16	71 1/2 ▼	65 1/2	RT			5.50/16	11/28				St	4	1	3.54	4.55	6.26
70	NDB950	85 1/2	7 15/16	28 1/8	3286	56	84	20	10 1/2	132 11/16	71 1/2 ▼	65 1/2	RT			6.00/16	12/28				St	5	1	2.30	3.66	4.86
71	NDB960	85 1/2	7 15/16	28 1/8	3277	56	84	20	10 1/2	132 11/16	71 1/2 ▼	65 1/2	RT			6.00/16	12/28				St	5	1	2.30	3.66	4.86
72	NAA	73 7/8	8 5/8	21	2550	48	76	20	11 1/2	118 7/8	63 3/4	57 1/4	RT			4.00/19	10/28	32.41	26.82	494	St	4	1	3.58	4.60	6.33
73	Friday Tractor 048	79	12	12	3580	57	76	26	15	127	75	55	RT			6.00/16	13/24	46.00	34.63		Op	10	2	1.90	2.80	3.40
74	International W-400	82			5940	60	66	18	Ad	130	76	93	Op			6.50/18	14/30			NT	Op	5	1	2.42	3.72	4.67
75	W-400D	82			6260	60	66	18	Ad	130	76	92	Op			6.50/18	14/30			NT	Op	5	1	2.42	3.72	4.67
76	Cub Lo-Boy	62		14	1590	40	56	23	Ad	97	48 ▼	55	RT			4.00/12	7/24			NT	Op	3	1	2.30	3.10	6.90
77	300 Utility Tractor	75		21	4140	48	76	26	Ad	123	64 ▼	58	RT			5.50/16	10/28			539	Op	5	1	2.60	3.97	5.36
78	Love	87	8 1/2	21 1/2	4000	54	78	27	Ad	134	76	66 1/2	RT			6.00/16	13/24	37.00	31.00		Op	10	2	2.75	4.75	8.80
79	Massey- 44 Sp. Std.	88 1/8	12 1/2	13 1/2		56	56	19 1/2	10 1/2	136 5/8	73 1/4	75 1/2	RT			7.50/16	13/30	50.29	45.85	510	Op	5	1	2.19	3.31	4.40
80	Harris 44 Sp. RT	88	9	16 3/8		57	88 1/4	19 1/2	12 1/2	134 1/2	79	80 1/4	RT			6.50/16	11/38	50.29	45.85	510	Op	5	1	2.40	3.62	4.82
81	44 Sp. RS	87 1/2	9	16 3/8		57	88 1/4	19 1/2	12 1/2	134 1/2	79	79 1/4	RT			9.00/16	11/38	50.29	45.85	510	Op	5	1			
82	44 Sp. HA	99 1/2	13 1/2	16 3/8		57	88 1/4	19 1/2	12 3/4	147 1/2	79	79 1/4	RT			6.50/16	11/38	50.29	45.85	510	Op	5	1			
83	Mustang Std.	75 3/4	NA	13		52	52	18 1/4	8 1/4	121	70 1/4	NA	RT			5.00/15	11/28	31.59	23.91	403	Op	4	1	2.55	3.66	4.81
84	Mustang RT	82 1/2	NA	13 1/4		52	88 ▲	18 1/4	7 1/2	122 1/2	70 1/4	NA	RT			4.00/15	11/28	31.59	23.91	403	Op	4	1			
85	Mustang RS	82 1/2	NA	13 1/4		52	88 ▲	18 1/4	7 1/2	123 5/8	70 1/4	NA	RT			6.00/12	11/28	31.59	23.91	403	Op	4	1			

For references and abbreviations see pages 166 and 167

For Directory of the Tractor Manufacturers listed above, see page 286





WHEEL TYPES

Travel Speeds at Normal Governed Engine R.P.M. with Standard Wheels				ENGINE							FUEL									BELT PULLEY			CAPACITIES							
Fourth	Fifth	Sixth	Reverse	Make and Model	Number of Cylinders—Bore and Stroke (In.)	Piston Disp. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	Starting Method	Line Number
			3.80	Own 1B	4-3½x3½	125	1500	I	3	2¼	G		FM	Zen	Don	Own	P	Pu	Roc SP	SG	8	5½	1130	FK	2	13	4	7	4+	Ele	1
			3.00	Own B	4-3½x3½	125	1500	I	3	2¼	G,D		FM	Zen	Don	Own	P	Pu	Roc SP	SG	8	5½	1130	FK	2	13	4	6	11¾	Ele	2
11.25			3.50	Own CE	4-3½x3½	125	1650	I	3	2¼	G	K	DR	Zen	Don	Own	P	Pu	Roc SP	SG	8	5½	1220		2	13	4	8½	11½	Ele	3
6.91			1.96	Cont N62	4-2⅝x3½	62	1800	L	2	2	G		DR	Mar	Don	Cont	P	TS	Roc SP		6	4	1950	FK	1⅝	5	3½	8		Ele	4
11.25			3.00	Own WD	4-4x4½	226	1400	I	3	2½	G,D		DR	Zen	Uni	Own	P	Pu	Roc SP	SG	9	6½	1260	SA	3½	15	6	17	13¾	Ele	5
11.18			3.17	Bu 6-3⅛x4½		230	1625	I	7	2½	O		Bu	Uni	Bu	P	Pu	Roc SP	SG	9	6½	1463	SA	4¼	15	6	17	13¾	Ele	6
12.00			1.22	Cont GD157	4-3⅝x4⅝	157	2000	I	3	2⅝	O		AL	Bos	Don		P	TS	Roc SP	CH	8½	6¼	1650	FK	5	12½	5	14	4	Ele	7
5.00			1.69	Cont F162	4-3⅞x4⅝	162	2400	I	3	2½	G		AL	Mar	Don		P	TS	Roc SP	CH	8½	6¼	1800	FK	5	12½	5	14	4	Ele	8
15.00			1.69	Cont F162	4-3x4⅝	162	2400	I	3	2½	K		AL	Mar	Don		P	TS	Roc SP	CH	8½	6¼	1800	FK	5	12½	5	14	12	Ele	9
10.00			2.75	Own S	4-3½x4	165	1600	I	3	2½	G	D	Own	Zen	Uni	Own	P	Pu	TD DO	CH	9¼	6⅝	1112	FK	4	15¼	5	36		HE	10
10.00			2.75	Own S	4-3½x4	165	1600	I	3	2½	G	D	Own	Zen	Uni	Own	P	Pu	TD DO	CH	9¼	6⅝	1112	SA	4	15¼	5	36		HE	11
10.00			2.62	Own S	4-3½x4	165	1600	I	3	2½	G	D	Own	Zen	Uni	Own	P	Pu	Roc MD	CH	9¼	6⅝	1112	FK	4	14	5	36		HE	12
10.00			2.75	Own LA	4-4½x6	403	1100	I	3	3	G	D	Own	Zen	Own	Own	P	Pu	TD DO	CH	13	8¼	779	FK	15¼	31	12	68		HE	13
12.00			3.25	Own VA	4-3½x3¾	124	1425	I	3	2⅛	G	D	Own	Mar	Vor	Own	P	Pu	SP	SG	10¼	6	969	SA	3¼	10½	5	28	+8	Ele	14
9.89			2.87	Own 500	6-4x5	377	1350	I	7	3	O			Bos	Don	Bos	P	Pu	Own SP	CH	13	8¾	956	FK	14	30	14	63		Ele	15
3.70	4.60	▲▲		Own	4-4x5	251	1450	I	5		O		AL	Bos	Don	Own	P	Pu		SP SG	10½	7¼	1128	FK	7½	21	9	60		Ele	16
3.70	4.60	▲▲		Own	4-4x5	251	1450	I	5		G	D,LP	AL	Mar	Don	Own	P	Pu		SP SG	10½	7¼	1128	FK	7½	21	9	60		Ele	17
3.70	4.70	††		Own	4-4x5	251	1450	I	5		O		AL	Bos	Don	Own	P	Pu		SP SG	10½	7¼	1128	FK	7½	21	9	60		Ele	18
3.70	4.70	††		Own	4-4x5	251	1450	I	5		G	D,LP	AL	Mar	Don	Own	P	Pu		SP SG	10½	7¼	1128	FK	7½	21	9	60		Ele	19
12.50			3.00	Cont F140	4-3½x4⅝	140	1800	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB SP	SG	10	6¼	1160	SF	3	12½	4	8	†13	Ele	20
13.50			4.00	Bu 4B153	4-3½x4½	153	1650	I	3	2½	G	D,O,LP	AL	M-Z	Don	Novi	P	Pu	BB SP	SG	8¼	7½	1336	SF	3½	15	5	20	**	Ele	21
4.50	6.25	10.50	(e)	Bu 6B230	6-3½x4½	229	1650	I	7	2½	G	O,D,LP	AL	Zen	Don	Novi	P	Pu	BB SP	SG	12	8½	1000	SF	4¾	21	6	40	**	Ele	22
4.32	5.95	9.85	(e)	Bu 6B273	6-3¾x4½	273	1650	I	7	2½	G		AL	Zen	Don	Novi	P	Pu	BB SP	SG	12	8½	1000	DFS	4¾	21	6	40	**	Ele	23
4.32	5.95	9.85	(e)	Bu 6DA273	6-3¾x4½	273	1650	I	7	2½	O			Bos	Don	Bos	P	Pu	BB SP	SG	12	8½	1000	DFS	4¾	21	6	40	**	Ele	24
4.50	6.25	10.50	(e)	Per L4	4-4½x4¾	269	1650	I	3	3	O				Don		P	Pu	BB SP	SG	12	8½	1000	FK	3¾	21	8½	40		Ele	25
4.50	6.25	10.50	(e)	Own	4-3¾x4½	198	1650	I	5	2½	G		AL	Zen	Don	Novi	P	Pu	BB SP	SG	12	8½	1000	FK	4¾	21	5	40		Ele	26
4.50	5.75	10.00	2.50	Own 50	2-4½x5½	190	1250	I	2	2½	G	K,D,LP	DR	Mar	Don	Own	P	Pu	Own MD	SG	9½	7¼	1250	FK	4½	15½	7	20		Ele	27
4.50	6.25	11.00	3.00	Own 60	2-5⅛x6¾	321	975	I	2	2⅝	G	K,D,LP	DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	FK	8¼	20½	8	28		Ele	28
4.50	6.50	11.50	3.00	Own 60	2-5⅛x6¾	321	975	I	2	2⅝	G	K,D,LP	DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	SA	8¼	20	8	34		Ele	29
4.50	6.50	11.25	2.75	Own 60	2-5⅛x6¾	321	975	I	2	2⅝	G	K,D	DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	SA	8¼	20	8	34		Ele	30
4.50	6.25	11.00	3.00	Own 60	2-5⅛x6¾	321	975	I	2	2⅝	G	K,D,LP	DR	Mar	Don	Own	P	Pu	Own MD	CH	12½	7⅝	975	DA	8¼	20½	8	28	†13¾	Ele	31
6.50	8.75	12.50	3.25	Own 70	2-5⅞x7	380	975	I	2	3¼	G	LP	DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	FK	8½	24½	11	30		Ele	32
6.50	8.75	12.50	3.25	Own 70	2-6⅛x8¾	376	1125	I	3	(a)	O		DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	1125	FK	7	24½	12	30		Ele	33
6.50	8.75	12.50	3.25	Own 70	2-6⅛x7	413	975	I	2	3¼	D		DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	FK	8½	24½	11	30		Ele	34
6.25	8.50	12.00	3.25	Own 70	2-5⅞x7	380	975	I	2	3¼	G		DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	DS	8½	24½	11	30		Ele	35
6.25	8.50	12.00	3.25	Own 70	2-5⅞x7	380	975	I	2	3¼	LP		DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	DS	8½	33	11	30		Ele	36
6.25	8.50	12.00	3.25	Own 70	2-6⅛x8⅝	376	1125	I	3	(a)	O		DR	SBS	Don	Own	P	Pu	Own MD	SG	12½	7⅝	1125	DS	7	20	12	30		Ele	37
6.25	8.50	12.00	3.25	Own 70	2-6⅛x7	413	975	I	2	3¼	D		DR	Mar	Don	Own	P	Pu	Own MD	SG	12½	7⅝	975	DS	8½	24½	11	30		Ele	38
6.50	8.75	12.50	3.25	Own 70	2-5⅞x7	380	975	I	2	3¼	G,O	K,D,LP	DR	Mar	Don	Own	P	Pu	Own MD	CH	12½	7⅝	975	DA	8½	24½	11	30	†13¾	Ele	39
10.00			1.62	Own M	2-4x4	101	1650	I	2	2⅛	G			DR	Mar	Don	Own	P	TS	Au SP	SG	7¼	6	1575	FK	3½	9	5	6½	13¾	Ele	40
10.00			1.62	Own M	2-4x4	101	1650	I	2	2⅛	G			DR	Mar	Don	Own	P	TS	Au SP	SG	7¼	6	1575	FK	3½	9	5	7½	†12	Ele	41
10.00			1.62	Own M	2-4x4	101	1650	I	2	2⅛	G			DR	Mar	Don	Own	P	TS	Au SP	SG				FK	3½	9	5	6½	†11½	Ele	42
5.30	6.75	12.25	2.67	Own 80	2-6⅛x8	472	1125	I	3	4⅛	O			DR	B-S	Don	Own	P	Pu	Own MD	SG	12¾	9	1125	SA	8¾	32½	13	13		Ele	43
11.24			2.50	Own 40	2-4x4	101	1850	I	2	2⅝	G	D		DR	Mar	Don	Own	P	TS	Au SP	SG	9¼	6⅝	1267	FK	3½	10	5	7½	†12	Ele	44
11.95			2.50	Own 40	2-4x4	101	1850	I	2	2⅝	G	D		DR	Mar	Don	Own	P	TS	Au SP	SG	9¼	6⅝	1267	FK	3½	10	5	6½	†13¾	Ele	45
				Own 40	2-4x4	101	1850	I	2	2⅝	G	D		DR	Mar	Don	Own	P	TS	Au SP	SG	9¼	6⅝	1267	FK	3½	10	5	6½	†12¾	Ele	46
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DA	2¾	10½	5	6½	† ¾	Ele	47
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DA	2¾	10½	5	6½	†13¾	Ele	48
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DF	2¾	10½	5	7½	†12	Ele	49
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DA	2¾	10½	5	6½	†13¾	Ele	50
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DA	2¾	10½	5	6½	†13¾	Ele	51
12.00			2.50	Own 420	2-4¼x4	113	1850	I	2	2⅜	G	TF		DR	Mar	Don	Own	P	Pu	Au SP	SG	9¼	6⅝	1270	DA	2¾	10½	5	7½	†13½	Ele	52
			2.72	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	1540		1½	7	4	2½	†13	Ele	53
			3.03	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	1540		1½	7	4	2½	†11	Ele	54
			2.72	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	1540		1½	7	4	2½	†11	Ele	55
			3.03	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	15•0		1½	7	4	2½	†11	Ele	56
			2.85	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	1540		1½	7	4	2½	†11	Ele	57
			3.03	Cont N62	4-2⅝x3½	62	1800	L	2	2	G	K	AL	Zen	Vor	Cont	P	TS	Au	SG	7	5	1540		1½	7	4	2½	†11	Ele	58
4.71	7.07	12.96	▲▲	Cont Z134	4-3¼x3¾	134	2000	I	3	2¼	G		DR	M-C	Don	Novi	P	Pu	Roc SP	SB	9	6	1356	DA	2½	14	5	32		Ele	59
4.90	7.36	13.49	▬	Cont Z134	4-3¼x3¾	134	2000	I	3	2¼	G		DR	M-C	Don	Novi	P	Pu	Au DSP	SB	9	6	1356	DA	2½	14	5	32		Ele	60
13.20			3.94	Own EAE	4-3½x3½	134	2000	I			G			Own	Mar	HH	Novi	P		Lo SP	IG				DA	3¾	12¾	4	6½	8	Ele	61
13.20			3.94	Own EAE	4-3½x3½	134	2000	I			G			Own	Mar	HH	Novi	P		Lo SP	IG				DA	3¾	12¾	4	6½	8	Ele	62
14.05			4.17	Own EAE	4-3½x3½	134	2000	I	3	2½	G			Own	Mar	HH	Novi	P	Pu	Lo SP	IG	9	6½	1358	DA	3¾	12¾	4	6½	8	Ele	63
6.96	12.38		4.07	Own EAE	4-3½x3½	134	2000	I	3	2½	G			Own	Mar	HH	Novi	P	Pu	Lo SP	IG	9	6½	1279	DA	3¾	12¾	4	6½	8	Ele	64
6.96	12.38		4.07	Own EAE	4-3½x3½	134	2000	I	3	2½	G			Own	Mar	HH	Novi	P	Pu	Lo DP	IG	9	6½	1279	DA	3¾	12¾	4	6½	8	Ele	65
				Own EAF	4-3⅞x3½	172	2200	I			G			Own	Mar	HH	Novi	P		Lo SP	IG				DA	3¾	15¾	4	8½	11½	Ele	66
6.72	11.96		3.93	Own EAF	4-3⅞x3½	172	2200	I	3	2½	G			Own	Mar	HH	Novi	P	Pu	Lo SP	IG	9	6½	1279	DA	3¾	15¾	4	8½	11½	Ele	67
6.72	11.96		3.93	Own EAF	4-3⅞x3½	172	2200	I	3	2½	G			Own	Mar	HH	Novi	P	Pu	Lo DP	IG	9	6½	1279	DA	3¾	15¾	4	8½	11½	Ele	68
13.06			3.87	Own EAE	4-3½x3½	134	2000	I			G			Own	Mar	HH	Novi	P		Lo SP	IG	9	6½	1358	SA	3¾	15¾	4	8½	9½	Ele	69
6.71	11.95		3.93	Own EAF	4-3⅞x3½	172	2200	I			G			Own	Mar	HH	Novi	P		Lo SP	IG	9	6½	1279	SA	3¾	15¾	4	8½	9½	Ele	70
6.71	11.95		3.93	Own EAF	4-3⅞x3½	172	2200	I			G			Own	Mar	HH	Novi	P		Lo DP	IG	9	6½	1279	SA	3¾	15¾	4	8½	9½	Ele	71
13.20			3.94	Own EAE	4-3½x3½	134	2000	I	3	2½	G				Mar	HH	Novi	P	Pu	Lo SP	IG	9	6	1358	DA	3¾	11	▲▲8	5	8½	Ele	72
5.10	6.40	9.20	2.80	Chr Ind 30	6-3¼x4⅝	230	1800	L	4	2½	G		AL	Car	Uni	Pie	P	Pu	BB SP	Hel	8¾	6⅝	1025	FK	5	18½	5	6	6	Ele	73
6.49	16.15		3.22	Own C264	4-5¼x4	264	1450	I	3		G	D,K		Own	Don	Own		P	Pu		SG	11	7½	899	CL	6¾	18	8	48		Ele	74
6.49	16.15		3.22	Own D264	4-5¼x4	264	1450	I	5		O			Own	Don	Own		P	Pu		SG	11	7½	899	CL	7¼	18	9	48		Ele	75
			2.60	Own C60	4-2⅝x2¾	60	1800	L	3		G			Own	Don	Own		P	TS		SG	9	4½	1485	WG	2½	7½	3	2	†13¾		76
6.86	16.74		3.24	Own C169	4-3⅞x4¼	169	2000	I	3		G			Own	Don	Own		P	Pu		SG	11	7½	1062	CL	4½	11½	6	28		Ele	77
14.15	20.95	29.15	(c)	Chr Ind 6	6-3¼x4⅝	231	1500		4		G		AL	Car		Pie	P	Pu	BB SP	SIG	11	9	Var	FK	4¼	20	6	5½	12½	Ele	78
5.72	12.23		2.86	Own H277	4-4x5½	277	1350	I	3	2⅞	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	79
6.25	13.38		3.16	Own H277	4-4x5½	277	1350	I	3	2⅞	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	80
				Own H277	4-4x5½	277	1350	I	3	2⅞	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	81
				Own H277	4-4x5½	277	1350	I	3	2⅞	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB SP	SG	13½	6½	3050	WS	22	23	7	48	**	Ele	82
13.54			2.55	Cont F140	4-3½x4⅝	140	1500	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB SP	SG	9½	6¼	3044	WS	13	13	4	8	13½	Ele	83
				Cont F140	4-3½x4⅝	140	1500	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB SP	SG	9½	6¼	3044	WS	13	13	4	8	13½	Ele	84
				Cont F140	4-3½x4⅝	140	1500	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB SP	SG	9½	6¼	3044	WS	13	13	4	8	13½	Ele	85

For references and abbreviations see pages 166 and 167

For Directory of the Tractor Manufacturers listed above, see page 286

1956 MODELS OF TRACTORS . . .

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Wheelbase (In.)	Minimum Turning Radius Outside (Ft.)	Ground Clearance (In.)	Shipping Weight with Rubber Tires (Lb.)	TREAD (In.): Minimum	TREAD (In.): Maximum	DRAWBAR: Lateral Adjustment (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width (In.)	OVERALL DIMENSIONS: Height—To Highest Point (In.)	Standard Equipment	WHEELS: STEEL Diam. and Face: Front (In.)	WHEELS: STEEL Diam. and Face: Rear (In.)	WHEELS: TIRE SIZE: Front (In.)	WHEELS: TIRE SIZE: Rear (In.)	HP. RATING: Belt	HP. RATING: Drawbar	Nebraska Test Number	Power Take-off	Number of Forward Speeds	Number of Reverse Speeds	Travel Speeds at Normal Governed Engine R.P.M. (M.P.H.) with Standard Wheels: First	Second	Third
	Massey-Harris (Cont'd)																									
1	Mustang HA	87	11¼	13½		52	88▲	18¼	7½	128	70⅞	NA	RT			5.00/15	11/28	31.89	23.91	403	Op	4	1	**		
2	33 Std.	86½	12¼	12½		54¼	54¼	19½	11½	135⅞	66¾	75	RT	28x4½	48x12	5.50/16	12/28	40.43	37.31	509	Op	5	1	2.43	3.42	4.25
3	33 RT	88	9	15⅞		52¾	88½	19½	12½	134⅞	79	80⅜	RT	22x4	54x11½	5.50/16	11/38	40.43	37.31	509	Op	5	1	2.67	3.73	4.66
4	33 RS	88⅞	9	15⅞		52¾	88½	19½	11½	135	79	80½	RT			9.00/10	11/38	40.43	37.31	509	Op	5	1			
5	33 HA	100½	13½	15⅞		52¾	88½	19½	11⅞	147½	79	80¾	RT	28x4½	54x11½	5.50/16	11/38	40.43	37.31	509	Op	5	1			
6	55 Std.	88½	12	12½		57¼	57⅞	23⅞	15½	145⅝	72½	83¼	RT	30x5⅞	54x12	7.50/18	14/34	58.20	60.45	455	Op	4	1	2.96	4.22	5.22
7	50 Std.	81½	8	12⅝	2930	48	76	17¼	Ad	120	63½	57	RT			5.50/16	11/28			NT	St	6	2	1.33	1.99	3.65
8	50 Hi Clearance	81½	8	18⅛	3110	48	82	17¼	Ad	124½	63½	63¼	RT			5.50/16	10/38			NT	St	6	2	1.45	2.18	3.99
9	50 Row Crop	84½	8	18⅛	2995	48	76	17¼	Ad	127½	63½	63¼	RT			5.50/16	10/38			NT	St	6	2	1.45	2.18	3.99
10	50 Tricycle	85⅞	8	18⅞	3005	48	76	17¼	Ad	127⅛	63½	63¼	RT			5.50/16	10/38			NT	St	6	2	1.45	2.18	3.99
11	McCormick S. WD-9	83			6630	52	66	18½	Ad	134	76	82	Op			7.50/18	14/34			519	Op	5	1	2.40	3.20	4.50
12	Super WDR-9	83			7030	52	66	18½	Ad	140	81▼	83	Op			7.50/18	15/34			NT	Op	5	1	2.50	3.40	4.80
13	WR-9S	83			6700	52	66	18½	Ad	140	81▼	83	Op			7.50/18	15/34			NT	Op	5	1	2.50	3.40	4.80
14	McCormick Frm.Cub	69		20½	1590	40	56	23	Ad	99	48▼	76	RT			4.00/12	8/24			386	Op	3	1	2.40	3.20	7.30
15	100	71		22	2710	40	70	19	Ad	107	58▼	82	RT			5.00/15	9/24			NT	Op	4	1	2.30	3.70	4.60
16	100/HC	71		27	2860	44	68	19	Ad	115	60½▼	86	RT			4.00/19	9/36			NT	Op	4	1	3.00	4.80	6.40
17	200	82		23▼	3310	61½	100		Ad	123	80½▼	85	RT			5.00/15	10/36			NT	Op	4	1	2.40	3.90	5.10
18	300	92		19▼	5060	8	105	26	Ad	136	75½▼	85	Op			5.50/16	11/38			NT	Op	5	1	2.50	3.82	5.15
19	300/HC	94		30	5500	60	94	30	Ad	149	89▼	93	RT			6.00/20	11/38			NT	Op	5	1	2.40	3.67	4.96
20	400	96		22½▼	6220	81½	106	26	Ad	141	84½▼	95	Op			6.00/16	12/38			NT	Op	5	1	2.50	3.85	4.82
21	400/D	96		22½▼	6640	81½	106	26	Ad	141	84½▼	94	Op			6.00/16	12/38			NT	Op	5	1	2.50	3.85	4.82
22	400/HC	101		34	6580	60	84	30	Ad	155	86▼	107	RT			6.00/20	13/38			NT	Op	5	1	2.52	3.88	4.87
23	400/DHC	101		34	6990	60	84	30	Ad	155	86▼	106	RT			6.00/20	13/38			NT	Op	5	1	2.52	3.88	4.87
24	Minneapolis-Moline																									
25	UTS	80	12	16	5200	50½F	62½	22	14½	130¾	71	72	RT			6.00/16	12/38	50.38	45.43	NT	Op	5	1	2.60	3.60	4.20
26	GB	82½	14	14⅝	6600	66	66	25	16⅝	137⅞	85	72½	RT			7.50/18	15/34	70.00	61.00	NT	Op	5	1	2.70	3.80	4.40
27	GBD	96⅞	16½	14⅜	7400	66	66	25	16⅝	151⅝	85	72½	RT			7.50/18	15/34	64.00	56.00	NT	Op	5	1	2.70	3.80	4.40
28	ZAS	72¼	12	12¼	3750	48F	59	11¼	14¼	121½	66	69	RT			5.50/16	11/38	37.48	33.36	NT	Op	5	1	2.40	3.60	4.60
29	UTS Diesel	80	12	16	5350	57	62½	22	14½	130⅝	71	72	RT			6.00/16	12/38	45.00	40.00	NT		5	1	2.60	3.60	4.20
30	UBUD Special	88	8½	25	5500	54½	84½	22	(‖)	133	83	78⅛	RT			6.00/16	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
31	Industrial UTIL	87½	17	17½	6310	66½	70½	N	20¾	136	84½	74⅝	RT			8.25/20	15/26	50.38	45.43	NT	Op	5	●●	2.40	3.50	4.00
32	Industrial UTI	79½	16	17½	6010	66½	70½	N	20¾	127⅝	84½	74⅝	RT			8.25/20	15/26	50.38	45.43	NT	Op	5	1	2.40	3.50	4.00
33	UBUS Special	87⅝	8¼	25	5250	54½	84½	22	(‖)	133	83	79	RT			6.00/16	12/38	50.38	45.43	520	Op	5	1	2.60	3.60	4.20
34	UBE Special	96½	10⅜	20	5500	54½	84½	22	(‖)	141	83	79	RT			6.00/16	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
35	UBN Special	87⅝	8¼	25	5500	54½	96	22	(‖)	133	94½	79	RT			9.00/10	12/38	45.00	40.00	NT	Op	5	1	2.60	3.60	4.20
36	ZBU	82	8	25	3700	54	88	18¾	14¾	126¼	83	74	RT			5.50/16	11/38	37.48	33.36	NT	Op	5	1	2.40	3.60	4.60
37	ZBE	90½	8	19⅞	3900	54	88	18¾	14¾	134¾	83	74	RT			5.50/16	11/38	37.48	33.36	NT	Op	5	1	2.40	3.60	4.60
38	ZBN	82⅝	8	25	3750	54	96	18¾	14¾	124¾	91	7⁰	RT			7.50/18	11/38	37.48	33.36	NT	Op	5	1	2.40	3.60	4.60
39	BF	79	7½	26	2900	52	76	20	16⅝	116	63	76	RT			5.00/15	10/28	27.80	25.10	409	Op	4	1	2.40	3.70	5.20
40	BG	75	9	20½	2880	40	68	20	14½	110	55¼	76	RT			5.00/15	11/24	27.00	25.00	NT	Op	4	1	2.30	3.50	4.90
41	445 Utility	81½	NA	20⅛	3750	56	84	23	7	120⅝	68	60½	RT			5.50/16	11/28	45.00	40.00	NT	Op	5	1	2.61	3.99	6.08
42	445 Type N	86⅛	NA	25½	3750	56	96	21	11	128½	90¼	67½	RT			7.50/16	11/38	45.00	40.00	NT	Op	5	1	2.78	4.26	6.48
43	445 Type U	86⅛	NA	25½	3700	56	88	21	11	130⅛	82¼	67½	RT			5.50/16	11/38	45.00	40.00	NT		5	1	2.78	4.26	6.48
44	445 Type E	93⅝	NA	22½	3800	56	88	21	11	137⅝	82¼	65½	RT			5.50/16	11/38	45.00	40.00	NT	Op	5	1	2.78	4.26	6.48
45	UTIL-D	87½	17	17½	6500	66½	70½	N	20¾	136	84½	74⅝	RT			8.25/20	15/26	45.00	40.00		Op	5	1	2.40	3.50	4.00
46	Oliver Super 55 HC	73½	10	14½	3050	48	76	20½	Ad	120	66¾	53½	RT			5.50/16	10/28	35.88	30.75	521	Op	6	2	1.47	2.26	3.03
47	Super 55 D	73½	10	14½	3200	48	76	20½	Ad	120	66¾	53½	RT			5.50/16	10/28	34.09	28.97	526	Op	6	2	1.47	2.26	3.03
48	RC Super 66 HC	86½	8¾	18⅛	2888	60	88	20½	Ad	134⅞	80¼	73¼	RT			5.50/15	9/38	38.84	29.60	541	Op	6	2	1.88	2.72	3.25
49	RC Super 66 D	86½	8¾	18⅛	3026	60	88	20½	Ad	134⅞	80¼	73¼	RT			5.50/15	9/38	35.43	29.09	544	Op	6	2	1.88	2.72	3.25
50	RC Super 77 HC	90½	9¼	18⅛	4228	60	92½	20¾	Ad	139¼	80¼	75●	RT			5.50/16	11/38	46.18	40.16	542	Op	6	2	2.46	3.24	4.29
51	Std. Super 77 HC	81¾	12½	13½	3808		52½	20¾	Ad	130⅝	67½	70¼	RT			6.00/16	13/26			NT	Op	6	2	2.55	3.36	4.45
52	Ind. Super 77 HC	81¾	12½	13½			69½	20¾	Ad	133½	70¾	70●	RT			7.00/20	12.00/24			NT	Op	6	2	2.03	2.67	3.54
53	RC Super 77 D	90½	9¼	18⅛	4348	60	92½	20¾	Ad	139½	80¼	75	RT			5.50/16	11/38	45.94	40.04	543	Op	6	2	2.46	3.24	4.29
54	Std. Super 77 D	81¾	12½	13½	3928		52½	20¾	Ad	130⅝	67½	70¼	RT			6.00/16	13/26			NT	Op	6	2	2.55	3.36	4.45
55	Ind. Super 77 D		12½	13½		52½	69½	20¾	Ad	133¼	78⅛	70●	RT			7.00/20	12.00/24			NT	Op	6	2	2.03	2.67	3.54
56	RC Super 88 HC	93½	9¾	18½	4920	60	92½	20¾	Ad	143⅞	80¼	75●	RT			6.00/16	12/38	58.08	49.81	525	Op	6	2	2.50	3.24	4.31
57	Std. Super 88 HC	82½	12½	13½	4710	54	62	20½	Ad	135⅛	77½	69½●	RT			6.00/16	14/26			NT	Op	6	2	2.52	3.27	4.34
58	Ind. Super 88 HC	82½	12½	12½		54	71	20½	Ad	135½	81½	70¾●	RT			7.00/20	13.00/24			NT	Op	6	2	2.01	2.63	3.46
59	RC Super 88 D	93½	9¾	18½	5020	60	92½	20¾	Ad	143⅞	80¼	75●	RT			6.00/16	12/38	55.63	49.58	527	Op	6	2	2.50	3.24	4.31
60	Std. Super 88 D	82½	12½	13½	4810	54	62	20½	Ad	135⅛	77½	69½●	RT			6.00/16	14/26			NT	Op	6	2	2.52	3.27	4.34
61	Ind. Super 88 D	82½	12½	11⅞		54	71	20½	Ad	135½	81½	70¾●	RT			7.00/20	13.00/24			NT	Op	6	2	2.01	2.63	3.46
62	Super 99 HC	80	10½	12	6800	62		20	Ad	136½	76	80	RT			7.50/18	14/34			NT	Op	6	2	2.39	3.14	4.24
63	Super 99 D	80	10½	12	6800	62		20	Ad	136½	76	80	RT			7.50/18	14/34	65.01	60.40	557	Op	6	2	2.39	3.14	4.24
64	Super 99 GM	80	10½	12	7600	62	62	20	Ad	136½	85½	71⅛	RT			7.50/18	15/34	83.46	77.44	556	Op	6	2	2.63	3.45	4.66
65	Sheppard SD-2	85	7½	25	4608	56	84	23		125	Ad	70¼	RT			6.00/16	11/38			NT	Op	8	2	1.85	2.67	3.14
66	SD-3	92	8	25	4708	56	84	23		131	Ad	70¼	RT			6.00/16	12/38			NT	Op	8	2	1.85	2.67	3.14
67	SD-4	91½	8¾	26	6000	56	84	22½	18¼	138¼	Ad	63½	RT			6.00/16	13/38			NT	Op	10	2	1.89	2.60	2.81
68	Tiger PTD 5	46	8	13	518	28	40	N	13	64	26	35	RT	8	12	4.00/8	5.00/12	5.10	4.50		St	1	1	8.00		
69	883	46	9	15	590	26	40	N	15	66	26	37	RT	8	16	4.00/8	6.00/16	5.10	6.80		St	1	1	8.00		
70	C-100	45	6	19	900	28	41	8	15	75	57	45	RT	12	18	3.50/12	8/16	8.90	10.00			3	1	2.00	6.00	10.0

ABBREVIATIONS

▲—With hub extension; 80" without.
♦—Total capacity, final drive cases.
‡—Clearance at front axle.
††—Capacity final drive, each case.
*—Minimum.
■—Rated using gasoline.
▲—At top of hood.
**—Included in transmission.
●●—With reversing transmission and 6 reverse speeds, from a low reverse of 1.80 and 5 other reverse speeds from 2.30 to 13.00 mph.
●—To top of steering wheel.
°—In listed order; 1.65, 3.41; 1.65, 3.41; 2.15, 3.70; 2.15, 3.70; 2.59, 4.52; 2.69, 4.68; 2.14, 3.72; 2.59, 4.52; 2.69, 4.68; 2.14, 3.72; 2.56, 4.40; 2.58, 4.43; 2.06, 3.54; 2.56, 4.40; 2.58, 4.43; 2.06, 3.54; 2.88, 5.11.
‡‡—74½ in. to 98 in.
°—6.27 in 6th, 7.33 in 7th, road speed in 8th.
▼▼—5.20 in 6th, 6.10 in 7th, 10.50 in 8th, 1.98 in low reverse, 2.28 in high reverse.
▼▼—5.24 in 6th, 6.15 in 7th, road speed in 8th, 1.98 in low reverse, 3.28 in high reverse.
▲—Includes filter.
▲▲—Low reverse, 1.57; high reverse, 6.29.
▲▲—6.60 in 6th; 9.00 in 7th; 13.00 in 8th; 1.70 in low reverse; 5.90 in high reverse.
♦♦—6.70 in 7th; 9.10 in 7th; 13.20 in 8th; 1.70 in low reverse; 5.90 in high reverse.
■■—1.64 in low reverse; 7.09 in high reverse.
§—1.77 in low reverse; 7.09 in high reverse.
§§—1.93 in low reverse; 7.15 in high reverse.
(a)—Center, 4½; ends, 4½.
(b)—Roller bearing.
(c)—Low reverse, 3.00; high reverse, 4.20.
(d)—Low reverse, 2.31; high reverse, 3.91.
(e)—Reverse 2.12 and 2nd speed 5.00.
(f)—Transmission driven, standard; engine driven, optional.
(g)—13¾ minimum; 24½ maximum.
(h)—3 in. rear, front S.A.E. 212 roller, center 2.75.
(i)—Gasoline, 486; LP gas, 540; distillate, 507.
(j)—15⅝ and 16⅞.
(k)—Gasoline, 472; LP gas, 513; distillate, 490.
(l)—4.29 in 6th, 4.90 in 7th, 6.40 in 8th, 9.91 in 9th, 16.00 in 10th, 1.62 in low reverse and 2.15 in high reverse.
(m)—Gasoline, 472; distillate, 4.90.
(n)—Gasoline, 493; LP gas, 514.
(o)—Gasoline, 493; distillate, 506; LP gas, 514; diesel, 528.
(p)—1.75 or 2.33 available.
(q)—16, 22, 25½, 32½.
(r)—12⅛ and 15⅛.
(s)—14⅛ and 17⅛.
(t)—14½ and 16½.
(u)—11⅝ to 22½.
A—Air.
AC—A.C. Spark Plug Co.
Ad—Adjustable.
AL—Electric Auto-Lite Co.
Au—Auburn Clutch Co.
BB—Borg & Beck Div.

For Directory of the Tractor Manufacturers listed above, see page 286

. . . WHEEL TYPE—*concluded*

Travel Speeds at Normal Governed Engine R.P.M. with Standard Wheels				ENGINE							FUEL									BELT PULLEY				CAPACITIES						
Fourth	Fifth	Sixth	Reverse	Make and Model	Number of Cylinders—Bore and Stroke (In.)	Piston Disp. (Cu. In.)	R.P.M. at Governed Speed	Valve Arrangement	Number of Main Bearings	Diameter of Main Bearings	Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type	Final Drive—Type	Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.)	Starting Method	Line Number
.....	.....	.....	.....	Cont. F140	4-3⅛x4⅝	140	1500	L	3	2¼	G	D	AL	Mar	Don	Novi	P	Pu	BB SP	SG	9½	6¼	3044	WS	13	13	4	8	13½	Ele	1
5.95	11.94	.....	2.76	Own. E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	2
6.53	13.08	.....	3.03	Own. E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	3
.....	.....	.....	.....	Own. E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	4
.....	.....	.....	.....	Own. E201	4-3⅝x4⅞	201	1500	I	3	2⅝	G	D,O	AL	Mar	Don	Own	P	Pu	BB SP	SG	13½	6½	3146	WS	18	19	7	48	**	Ele	5
12.07	.....	.....	2.54	Own. J382	4-4½x6	382	1350	I	3	3½	G	D,LP,O	AL	Zen	Don	Own	P	Pu	BB SP	SG	16	8½	3059	CL	28	27½	9	68	**	Ele	6
5.30	7.96	14.59	§§	Cont. Z134	4-3⅛x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au. SP	SB	9	6½	1356	FK	21¼	17	5	32	**	Ele	7
5.80	8.71	15.98	§§	Cont. Z134	4-3⅛x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au. SP	SB	9	6½	1356	FK	21¼	17	5	32	**	Ele	8
5.80	8.71	15.98	§§	Cont. Z134	4-3⅛x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au. SP	SB	9	6½	1356	SA	21¼	17	5	32	**	Ele	9
5.80	8.71	15.98	§§	Cont. Z134	4-3⅛x3⅞	134	2000	I	3	2¼	G	.....	DR	M-C	Don	Novi	P	Pu	Au. SP	SB	9	6½	1356	FO	21¼	17	5	32	**	Ele	10
5.50	15.80	.....	2.90	Own. D350	4-4½x5½	350	1500	I	5	.....	O	N	.....	Own	Don	Own	.....	Pu	.....	SG	14	8½	707	CL	9½	35	11	40	**	Ele	11
5.80	16.70	.....	3.10	Own. D350	4-4½x5½	350	1500	I	5	.....	O	N	.....	Own	Don	Own	.....	Pu	.....	SG	14	8½	707	CL	9½	35	11	40	**	Ele	12
5.80	16.70	.....	3.10	Own. C335	4-4⅜x5½	335	1500	I	3	.....	G	N	.....	Own	Don	Own	.....	Pu	.....	SG	14	8½	707	CL	8½	36	11	40	**	Ele	13
.....	.....	.....	2.70	Own. C60	4-2⅝x2⅝	60	1800	L	3	.....	G	N	.....	Own	Don	Own	.....	TS	.....	SG	9	4½	1322	WG	2½	7½	3	2	†† ⅞		14
10.00	.....	.....	2.90	Own. C123	4-3½x4	123	1400	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	.....	SG	8½	6	1157	WG	3¾	11	5	5	††1½	Ele	15
13.20	.....	.....	3.80	Own. C123	4-3½x4	123	1400	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	.....	SG	8½	6	1157	WG	3¾	11	5	5	††1½		16
10.70	.....	.....	3.10	Own. C123	4-3½x4	123	1650	I	3	.....	G	D,K	.....	CMZ	Don	Own	.....	Pu	.....	SG	8½	6	1363	WG	3¾	11	5	20	**	Ele	17
6.60	16.11	.....	3.12	Own. C169	4-3⅞x4½	169	1750	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	.....	SG	9¾	7½	1081	WG	4¼	17	6	28	**	Ele	18
6.35	15.49	.....	3.00	Own. C169	4-3⅞x4½	169	1750	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	.....	SG	9¾	7½	1081	WG	4¼	17	6	28	†13	Ele	19
6.71	16.70	.....	3.33	Own. C264	4-4x5½	264	1450	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	.....	SG	11	7½	899	WG	6½	18	9	48	**	Ele	20
6.71	16.70	.....	3.33	Own. D264	4-4x5½	264	1450	I	5	.....	O	N	.....	Own	Don	Own	.....	Pu	.....	SG	11	7½	899	WG	7¼	18	9	48	**	Ele	21
6.77	16.84	.....	3.36	Own. C264	4-4x5½	264	1450	I	3	.....	G	D,K	.....	Own	Don	Own	.....	Pu	.....	CH	11	7½	899	WG	6½	18	9	48	**	Ele	22
6.77	16.84	.....	3.36	Own. D264	4-4x5½	264	1450	I	5	.....	O	N	.....	Own	Don	Own	.....	Pu	.....	CH	11	7½	899	WG	7¼	18	9	48	†13	Ele	23
																															24
6.10	14.10	.....	2.00	Own. 283C	4-4⅛x5	283	1300	I	3	2⅜	G	TF,LP	DR	Mar	Uni	Own	P	Pu	TD SP	SG	16	7	741	FK	6	21	9	52	**	HE	25
6.30	14.70	.....	2.10	Own. 403C	4-4⅝x6	403	1300	I	3	2⅜	G	TF,LP	DR	Mar	Don	Own	P	Pu	TD MD	SG	16	7	741	FK	12	29	9	52	**	Ele	26
6.30	14.70	.....	2.10	Own. D425	6-4⅝x5	426	1300	I	4	2⅜	O	.....	.....	.....	.....	Own	Bos	P	Pu	TD MD	SG	16	7	741	FK	12	29	14	52	**	Ele	27
6.30	13.10	.....	2.20	Own. 206G	4-3⅝x5	206	1500	Ih	3	(h)	G	TF,LP	DR	Mar	Don	Own	P	Pu	TD SP	SG	15½	7	786	FK	3¾	19	7	28	**	HE	28
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	284	1300	I	3	2⅜	O	.....	Bos	.....	Don	Bos	P	Pu	TD SP	SG	16	7	741	FK	6	21	9	52	**	Ele	29
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	284	1300	I	3	2⅜	O	.....	Bos	.....	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	SA	6	21	9	52	**	Ele	30
5.80	13.50	.....	1.90	Own. 283B	4-4¼x5	284	1300	I	3	2⅜	G	.....	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	52	**	HE	31
5.80	13.50	.....	1.90	Own. 283B	4-4¼x5	284	1300	I	3	2⅜	G	.....	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	52	**	HE	32
6.10	14.10	.....	2.00	Own. 283C	4-4¼x5	284	1300	I	3	2⅜	G	TF,LP	DR	Mar	Uni	Own	P	Pu	Roc. SP	SG	16	7	741	SA	6	21	9	52	**	Ele	33
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	284	1300	I	3	2⅜	O	.....	Bos	.....	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	52	**	Ele	34
6.10	14.10	.....	2.00	Own. D283	4-4¼x5	284	1300	I	3	2⅜	O	.....	Bos	.....	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FO	6	21	9	52	**	Ele	35
6.30	13.10	.....	2.20	Own. 206G	4-3⅝x5	206	1500	Ih	3	(h)	G	TF,LP	DR	Mar	Don	Own	P	Pu	Roc. SP	SG	15½	7	786	SA	3¾	19	7	28	**	Ele	36
6.30	13.10	.....	2.20	Own. 206G	4-3⅝x5	206	1500	Ih	3	(h)	G	TF,LP	DR	Mar	Don	Own	P	Pu	Roc. SP	SG	15½	7	786	FK	3¾	19	7	28	**	Ele	37
6.30	13.10	.....	2.20	Own. 206G	4-3⅝x5	206	1500	Ih	3	(h)	G	TF,LP	DR	Mar	Don	Own	P	Pu	Roc. SP	SG	15½	7	786	FO	3¾	19	7	28	**	Ele	38
13.00	.....	.....	2.80	He 1XB3SL	4-3¼x4	133	1800	L	3	2	G	K	DR	Mar	Vor	Novi	P	Pu	Roc. SP	SG	10	6½	1160	WG	2¾	12	5	9	3	Ele	40
12.50	.....	.....	2.70	He 1XB3SL	4-3¼x4	133	1800	L	3	2	G	K	DR	Mar	Vor	Novi	P	Pu	Roc. SP	SG	8½	6½	1160	CL	2¾	12	5	9	†⅜	Ele	40
9.42	14.44	.....	3.99	Own. 206H4	4-3⅝x5	206	1550	I	3	(h)	G	LP	DR	Mar	Don	Own	P	Pu	Roc. SP	SG	8⅝	6½	1470	FK	3¼	14	7	32	**	Ele	41
10.05	15.40	.....	4.26	Own. 206H4	4-3⅝x5	206	1550	I	3	(h)	G	LP	DR	Mar	Don	Own	S	Pu	Roc. SP	SG	8⅝	6½	1550	FO	3¼	17	7	32	**	Ele	42
10.05	15.40	.....	4.26	Own. 206H4	4-3⅝x5	206	1550	I	3	(h)	G	LP	DR	Mar	Don	Own	P	Pu	Roc. SP	SG	8⅝	6½	1470	SA	3¼	17	7	32	**	Ele	43
10.05	15.40	.....	4.26	Own. 206H4	4-3⅝x5	206	1550	I	3	(h)	G	LP	DR	Mar	Don	Own	S	Pu	Roc. SP	SG	8⅝	6½	1550	FK	3¼	17	7	32	**	Ele	44
5.80	13.50	.....	1.90	Own. 283-4	4-4¼x5	284	1300	I	3	2⅜	O	.....	Bos	Bos	Don	Bos	P	Pu	Roc. SP	SG	16	7	741	FK	6	21	9	52	**	Ele	45
4.66	5.58	11.51	*	Own. 55HC	4-3½x3⅝	144	1600	I	3	2¼	G	.....	DR	M-C	Don	Own	PS	Pu	Au. SP	SG	9	6½	1319	FK	3½	13	4	20	**	Ele	46
4.66	5.58	11.51	*	Own. 55D	4-3½x3⅝	144	1600	I	3	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	Au. SP	SG	9	6½	1319	FK	3½	13	4	20	**	Ele	47
4.69	5.51	9.54	*	Own. 66HC	4-3½x3⅝	144	1600	I	3	2¼	G	.....	DR	M-C	Don	Own	PS	Pu	BB SP	SG	9½	7¼	1232	SA	3½	12¾	4	18	**	Ele	48
4.69	5.51	9.51	*	Own. 66D	4-3½x3⅝	144	1600	I	3	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	9½	7¼	1232	SA	3½	12¾	4	18	**	Ele	49
5.65	6.62	11.53	*	Own. 77HC	6-3½x3⅝	216	1600	I	4	2¼	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB SP	SG	11⅞	7¼	992	SA	4½	16¾	5	18	**	Ele	50
5.85	6.86	11.95	*	Own. 77HC	6-3½x3⅝	216	1600	I	4	2¼	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	16¾	5	18	**	Ele	51
4.65	9.34	16.27	*	Own. 77HC	6-3½x3⅝	216	1600	I	4	2¼	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	16¾	5	18	**	Ele	52
5.65	6.62	11.53	*	Own. 77D	6-3½x3⅝	216	1600	I	4	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	17	5	18	**	Ele	53
5.85	6.86	11.95	*	Own. 77D	6-3½x3⅝	216	1600	I	4	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	17	5	18	**	Ele	54
4.65	9.34	16.27	*	Own. 77D	6-3½x3⅝	216	1600	I	4	2¼	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	17	5	18	**	Ele	55
5.58	6.87	11.80	*	Own. 88HC	6-3⅝x4	265	1600	I	4	2⅝	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB SP	SG	11⅞	7¼	992	SA	4½	20½	6	18	**	Ele	56
5.62	6.91	11.88	*	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	20½	6	18	**	Ele	57
4.48	9.34	16.05	*	Own. 88HC	6-3⅝x4	265	1600	I	4	2⅝	G	.....	DR	MS-Z	Don	Own	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	20½	6	18	**	Ele	58
5.58	6.87	11.80	*	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	SA	4½	18¼	6	18	**	Ele	59
5.62	6.91	11.80	*	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	18¼	6	18	**	Ele	60
4.48	9.34	16.05	*	Own. 88D	6-3⅝x4	265	1600	I	4	2⅝	O	.....	.....	Bos	Don	Bos	PS	Pu	BB SP	SG	11⅞	7¼	992	FK	4½	18¼	6	18	**	Ele	61
5.58	7.01	12.45	*	Own. 99HC	6-4x4	302	1675	I	4	2⅝	G	.....	DR	Mar	Don	Own	P	Pu	BB SP	SG	12	9	1000	FK	5½	30	6	32	.....	Ele	62
5.58	7.01	12.45	*	Own. 99D	6-4x4	302	1675	I	4	2⅝	O	.....	.....	Bos	Don	Bos	P	Pu	BB SP	SG	12	9	1000	FK	5½	30	6	32	.....	Ele	63
6.13	7.70	13.68	*	GM 3-71	3-4¼x5	213	1675	I	4	2⅝	O	.....	.....	.....	Don	GM	P	Pu	BB SP	SG	12	9	1000	FK	5½	30	13	32	**	Ele	64
3.72	4.53	▽	(d)	Own. 13E	2-4¼x5	142	1650	I	3	2¾	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	8¼	7½	1350	.....	7	15	12	25	**	Ele	65
3.72	4.53	▽	(d)	Own. 8E	3-4¼x5	212	1650	I	4	2¾	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	8¼	7½	1350	.....	7½	15	13	25	**	Ele	66
3.28	3.88	(1)	(1)	Own. 16	4-4½x5	319	1650	I	5	3½	O	.....	Own	.....	Don	Own	P	Pu	Roc. SP	SG	10	7½	1150	.....	7½	22	16	32	**	Ele	67
.....	.....	.....	6.00	Br.	14 1-2⅝x2⅝	14	3200	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	TD MD	SGC	.....	.....	.....	SA	.....	1	½	1	1	HC	68
.....	.....	.....	5.00	Br.	23 1-3x3	19	3300	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	TD MD	SGC	.....	.....	.....	SA	.....	1½	½	1	1	HC	69
.....	.....	.....	3.00	Br.	23 1-3x3	19	3300	L	.....	.....	G	.....	Br	Br	Uni	Br	PS	A	.....	SG	7	4	1300	.....	.....	2	3	3	3	HC	70

BBS—Bosch or Bendix-Scintilla.
Bos—American Bosch Corp.
Br—Briggs & Stratton Corp.
B-S—Bosch or Scintilla.
Bu—Buda.
Car—Carter Carburetor Corp.
CH—Chain.
Chr—Chrysler Corp.
CL—Cam and Lever.
CMZ—Carter, Marvel-Schlebler or Zenith.
Cont—Continental Motors Corp.
D—Distillate.
DA—Divided axle.
DF—Divided axle or front axle knuckle.
DFS—Divided axle, front axle knuckle or solid axle.
DO—Double plate operating in oil.
Don—Donaldson Co.
DP—Double plate, dry.
DR—Delco-Remy Div.
DS—Divided or solid axle.
DSP—Dual single plate, dry.
Ele—Electric starting.
F—Front wheel tread.
FK—Front axle knuckle.
FM—Fairbanks Morse & Co.
FO—Fork type.
G—Gasoline.
GM—General Motors Corp.
Han—Handy Governor Corp.
HC—Hand crank.
He—Hercules Motor Corp.
HE—Hand or Electric.
Hel—Helical gear.
HH—Houdaille-Hershey.
Hol—Holley Carburetor Co.
I—In head (Valves).
IG—Internal gear.
Ih—Horizontal—In head (Valves).
K—Kerosene.
L—"L" head (Valves).
Lo—Long Mfg. Co.
LP—Liquid petroleum gas.
Mar—Marvel-Schebler Carburetor Div.
M-C—Marvel-Schebler or Carter.
MD—Multiple disc, operating dry.
MS-Z—Marvel-Schebler or Zenith.
M-Z—Marvel or Zenith.
N—No or none.
NA—Not available.
Novi—Novi Equipment Co.
NS—Non-circulating splash.
NT—Not tested.
O—Diesel fuel. **Op**—Optional.
P—Pressure.
Per—Perkins.
Pie—Pierce Governor Co.
PS—Pressure and splash.
Pu—Pump.
Roc—Rockford Clutch Div.
RT—Rubber tires.
S—Splash. **SA**—Solid axle.
SB—Spiral bevel gear.
SF—Solid axle or front axle knuckle.
SG—Spur gear.
SGC—Spur gear and chain.
SIG—Internal spur gear.
SP—Single plate, dry.
St—Standard.
TD—Twin Disc Clutch Co.
TF—Tractor fuel.
TS—Thermo-syphon.
Uni—United Air Cleaner Div.
Var—Various.
Vor—Vortex Mfg. Co.
Wico—Wico Electric Co.
WG—Worm gear.
Wis—Wisconsin Motor Corp.
WS—Worm and sector.
Zen—Zenith Carburetor Div.

For Directory of the Tractor Manufacturers listed above, see page 286

TRACTORS 1956

TRACK-LAYING TYPES

Line Number	TRACTOR MAKE AND MODEL	GENERAL: Minimum Turning Radius—Outside (Ft.) (Minimum Tread)	GENERAL: Ground Clearance (In.)	GENERAL: Shipping Weight (Lb.) Standard Shoe (Minimum Tread)	GENERAL: Tread: Minimum (In.)	GENERAL: Tread: Maximum (In.)	DRAWBAR: Lateral Adjustment—At Pin (In.)	DRAWBAR: Height Above Ground (In.)	OVERALL DIMENSIONS: Length (In.)	OVERALL DIMENSIONS: Width—Maximum (In.) (Minimum Tread)	OVERALL DIMENSIONS: Height to Highest Point (In.)	TRACK: Width of Shoe—Standard (In.)	TRACK: Length on Ground (In.)	HP RATING: Belt	HP RATING: Drawbar	Power Take-off	No. of Forward Speeds	No. of Reverse Speeds	MAXIMUM DRAWBAR PULL AT NORMAL GOVERNED ENGINE R.P.M.: First Gear (Lb.)	Second Gear (Lb.)	Third Gear (Lb.)	Fourth Gear (Lb.)	Fifth Gear (Lb.)	Sixth Gear (Lb.)	Travel Speeds at Normal Governed Engine R.P.M.: First Gear (M.P.H.)	Second Gear (M.P.H.)	Third Gear (M.P.H.)	Fourth Gear (M.P.H.)
1	Allis-Chalmers HD-6	7¼	11¼	12400	60	60	21	13½	127 7/8	78¾	68⅝	13	64¼	55.00	45.00	Op	5	1	11525	6780	4890	3960	2650		1.50	2.40	3.30	4.00
2	HD-11	8¾	13⅛	20500	74	74	26⅜	16½	154	86⅞	84+	16	85¾	85.00	75.00	Op	6	3	20000	13250	9300	7000	5700	4200	1.40	2.10	2.90	3.80
3	HD-16AC	9½	14⅝	31600	74	74	35	17⅝	178⅛	96	89½+	20	98⅛	150.00		Op	3	2	60000	47000	26000				2.50	4.30	7.30	
4	HD-21AC	10½	16½	44000	84	84	44	19⅝	194¾	109¼	98½+	24	106⅝	204.00		Op	2	1	65000	35000					3.00	7.50		
5	Caterpillar D-2		9	7175	40	50	20	12	107⅝	55⅝	61⅞	12	60½	43.00	38.00	Op	5	1	7250	5170	4110	3270	2145		1.80	2.70	3.20	3.90
6	D-4		11⅞	10375	44	60	21½	14¼	120¼	62	69⅜	13	61½	54.00	48.00	Op	5	1	9550	6930	5270	4000	2570		1.90	2.70	3.40	4.20
7	D-6		12½	17195	60	74	27¼	14	147⅞	79½	75⅜	16	85¾	85.00	75.00	Op	5	4	17000	10900	7450	5150	3620		1.70	2.60	3.60	5.00
8	D-7		15½	26930	74	74	35	17¼	167⅛	97	81¼	20	94⅜	126.00	102.00	Op	5	4	25900	17720	11960	7550	5260		1.50	2.20	3.20	4.60
9	D-8		13	40430	78	78		18⅞	195½	101¾	91⅝	22	111¾	191.00	155.00	Op	5	3	39150	30900	21000	14120	9490		1.50	1.90	2.80	3.80
10	D-9		20½	58725	90	90		21½	214¾	119¼	105	27	129¾	286.00	230.00	Op	6	6	54200	41600	30250	21000	14840	9720	1.60	2.10	2.80	3.80
11	John Deere 40-C	(a)	12	4200	36	46	2¼	12¾	102	67¼	64	10	(c)	24.99	20.14	Op	4	1	4515	3433	2463	1109			.76	2.14	2.93	5.30
12	420-C	6½	12	(b)	36	46	2¼	12¾	102	60¼	66	10	(c)			Op	4	1							.88	2.25	3.00	5.25
13	Euclid TC-12	7⅝	20	58100	110	110	N	22⅜	194	136	94¾+	26	115⅝				3	3	105000	86000	53000				1.80	3.50	8.30	
14	I.H.C. T-6	5½	8¼	7345	40	50	19¾	12¼	104	53	62¼	12	58¼	38.96	32.92	Op	5	1	7652	5215	3579	2767	1756		1.52	2.21	3.12	3.83
15	TD-6	5½	8¾	7665	40	50	19¾	12¼	104	53	62¼	12	58¼	40.29	33.78	Op	5	1	8131	5514	3742	2992	1903		1.52	2.21	3.12	3.83
16	TD-9	6	10½	10605	44	60	19½	13¼	114	59½	66⅝	13	63¼	48.91	41.31	Op	5	1	9909	6872	4752	3626	2419		1.56	2.20	3.04	3.88
17	TD-14A	7½	11¾	17700	56	74	27¼	13½	134½	74½	78⅛	16	78¼	75.00	66.00	Op	6	2	16260	12500	9370	7170	5230	3770	1.50	1.90	2.50	3.10
18	TD-18A	9½	14	26340		74	31½	15⅝	158¼	94	84⅝	20	94½	117.00	103.00	Op	6	2	24300	18290	14520	10860	7920	6100	1.60	2.10	2.60	3.40
19	TD-24	9½	13⅞	40070		80	39¼	17¼	182¼	102	94⅜	22	104½		161.07	Op	8	8	37160	28490	23415	18180	13125	††	1.60	2.10	2.50	3.20
20	TD-24TC	9½	13⅞	40375		80	39¼	17¼	182¼	102	94⅜	22	104½				8	8							2.70	3.50	5.50	6.90
21	Oliver OC-3	6½	20	3182	31	68	25	14⅝	100	52⅞	50⅝	6	50	26.36	21.85	Op	3	1	3940	2512	1472				2.01	3.19	5.24	
22	AG-6	7½	13½	7086	42	50	21	14⅜	103½	56	54+	12	62	38.80	30.60	Op	3	1	6020	4160	2640				1.78	2.62	3.74	
23	AD	7½	13½	7682	42	50	21	14⅜	101½	56	54+	12	62	38.00	30.50	Op	3	1	6500	4520	2800				1.78	2.62	3.74	
24	OC-12G	8½	11¾	9800	44	60	16½	16½	109⅝	76	57¾	14	67¾	60.27	53.14		4	2	10399	7831	5322	3161			1.60	2.34	3.34	5.27
25	OC-12D	8½	11¾	10140	44	60	16½	16½	109⅝	76	57¾	14	67¾	58.98	53.05	Op	4	2	11333	8310	5708	3391			1.60	2.34	3.34	5.27
26	DG	9	12¼	12532	48	61	16⅜	17¼	128	69	67+	16	76¼	71.40	60.67	Op	4	2	14582	9362	7188	3964			1.45	2.28	3.04	4.85
27	DD	9	12¼	13351	48	61	16⅜	17¼	128	69	67+	16	76¼	74.43	60.47	Op	4	2	14735	9632	7277	3978			1.45	2.28	3.04	4.85
28	OC-18	12½	16⅞	32000	78	....	30⅝	19¼	167½	111⅝	82½+	22	100¼		133.02	Op	4	2	31028	18513	11788	6880			1.50	2.61	3.76	5.45
29	OC-6	6¾	20	5280	32	68	17¼	15¼	121½	82¼	56¼‡‡	8	54½	37.90	32.99	Op	6	2	6215	4681	3426	2532	1990	897	1.88	2.44	3.23	4.19
30	OC-6	6¾	20	5425	32	68	17¼	15¼	121½	82¼	56¼‡‡	8	54½	37.40	34.74	Op	6	2	6779	5204	3708	2729	2104	922	1.88	2.44	3.23	4.19
31	Terratrac 200		16	4820	36	72	16	15	92	82	63½	10	54	36.50		Op	3	1	5120	3240	1970				1.74	2.75	4.52	
32	300		16	4830	36	72	16	15	92	83	63½	11	54	36.50		Op	3	1	5120	3240	1970				1.74	2.75	4.52	
33	400		16	4980	36	72	16	15	101	84	63½	12	57	42.50		Op	3	1	5990	3770	2305				1.74	2.75	4.52	
34	500		16	5450	36	72	16	15	101	85		13	57	50.00		Op	3	1	11200	7180	2660				1.88	2.97	4.88	
35	600	11¼	17	7000	49	49	16	16	101	63		14	62⅝	62.00			4	4	15960	9000	7750	4450			1.58	2.79	3.23	5.68

ABBREVIATIONS

♦—Exclusive of exhaust stacks.
‡—At dash board.
‡‡—Total for all cases.
^—With converter.
†—2nd reverse speed, 3.50; 3rd, 8.30.
■—Two engines used.
▪—Independent power to each track.
*—Four reverse speeds, 2nd, 3.5; 3rd, 5.3; 4th, 6.8.
**—2nd reverse speed, 3.00; 3rd, 3.50; 4th, 6.20.
♦♦—9690 lb. in 6th speed; 7320 lb. in 7th; 5490 lb. in 8th.
^^—5.40 mph in 6th speed; 6.30 mph in 7th; 8.00 mph in 8th.
‡‡—8 reverse speeds ranging from 1.56 to 7.67.
^^^—2nd reverse speed, 3.50; 3rd, 4.40.
°—Each engine.
▼—Electric starter optional.
▼▼—Included in transmission.
(a)—4 roller, 6; 5 roller, 6¾.
(b)—4 roller, 4,200; 5 roller, 4,800.
(c)—4 roller, 56; 5 roller, 66¾.
AL—Electric Auto-Lite Co.
All—Allison Div.
A-R—Auburn or Rockford.
Aub—Auburn Clutch Co.
Bos—American Bosch Co.
Clu—Clutches.
Cont—Continental Motors Corp.
D—Distillate.
Dif—Differential.
DO—Double plate, operating in oil.
Don—Donaldson Co.
DP—Double plate dry.
DR—Delco Remy Div.
Ele—Electric.
FO—Four plate, operating in oil.

For Directory of the Tractor Manufacturers listed above, see page 286

Tractor Production by Type of Tractor and Fuel Used

As reported by the Industry Division, Bureau of the Census.

Type of Tractor	Type of Fuel: Gasoline	Diesel	LPG	Total
1955				
Wheel-type (all purpose)	263,821	29,130	10,162	303,113
Wheel-type (other than all purpose)	13,317	11,993	1,753	27,063
Track laying	8,970	37,913		46,883
Total—All tractors	286,108	79,036	11,915	377,059
Per Cent of Total	75.88%	20.96%	3.16%	100.00%
1954				
Wheel-type (all purpose)	199,879	12,899	4,452	217,030
Wheel-type (other than all purpose)	13,129	15,200	396	28,725
Wheel-type (contractors' off-highway)		2,871		2,871
Tracklaying	6,657	32,747		39,404
Total—All tractors	219,665	63,517	4,848	288,030
Per Cent of Total	76.26%	22.05%	1.69%	100.00%

TRACK-LAYING TYPES

Travel Speeds at Normal Governed Engine R.P.M.				ENGINE										FUEL														BELT PULLEY				CAPACITIES							
Fifth Gear (M.P.H.)	Sixth Gear (M.P.H.)	Low Reverse (M.P.H.)	High Reverse (M.P.H.)	Make and Model	Cycle	No. of Cylinders—Bore and Stroke (In.)	Displacement (Cu. In.)	R.P.M. at Governed Speed	S.A.E. or Tax Hp.	Valve Arrangement	No. of Main Bearings	Diam. Main Bearings (In.)		Standard	Optional	Ignition—Make	Carburetor or Injector Pump—Make	Air Cleaner—Make	Governor—Make	Oiling System—Type	Cooling System—Type	Clutch—Make and Type		Drive Type to Traction Members		Diameter (In.)	Face (In.)	Normal R.P.M.	Steering Type	Cooling System (Gal.)	Fuel Tank (Gal.)	Crankcase (Qts.)	Transmission (Qts.)	Final Drive Case (Qts.) (Each Case)	Starting Method	Line Number
5.50		2.00		Own HD344	4	4-4 1/2 x5 1/2	344	1800	31.5	I				O	N	N	Bos	Uni	Bos	P	Pu	A-R	SP	SG		12	8 3/4	963	Clu	6 1/2	40	10	20	12	Ele	1
4.40	5.70	1.60		Own HD516	4	6-4 1/2 x5 1/2	516	1800	47.3	I				O	N	N	Bos	Uni	Bos	P	Pu	A-R	SP	SG		13 3/8	10	1045	Clu	10	60	15	27	13	Ele	2
		3.20	5.50	Own HD844	4	6-5 1/4 x6 1/2	844	1800	66.1	I				O	N	N	Bos	Uni	Bos	P	Pu	TD	SP	SG		18	15	693	Clu	17	100	24	32	22	Ele	3
		5.50		Own HDS844	4	6-5 1/4 x6 1/2	844	1800	66.1	I				O	N	N	Bos	Don	Bos	P	Pu	TD	SP	SG		20	15	780	Clu	20	135	24	39	30	Ele	4
5.50		2.20		Own D2	4	4-4x5	252	1650	25.6	I	5	2 3/4		D			Own	Don	Own	P	Pu	Own	SP	SG		12	7 1/2	1001	Clu	7 1/2	26	14	8	4 1/2	GE	5
6.10		2.20		Own D4	4	4-4 1/2 x5 1/2	350	1600	32.4	I	5	3 1/2		D			Own	Don	Own	P	Pu	Own	SP	SG		12	8 1/2	960	Clu	11	30	15	18	7	GE	6
6.60		2.00	6.20	Own D6	4	6-4 1/2 x5 1/2	525	1600	48.6	I	7	3 1/2		D			Own	Don	Own	P	Pu	Own	DO	SG		13 3/8	13	896	Clu	14 1/2	48	22	46	9 1/2	GE	7
5.90		1.80	5.40	Own D7	4	4-5 3/4 x8	831	1200	52.9	I	5	3 3/4		D	N		Own	Don	Own	P	Pu	Own	DO	SG		17 3/8	15	830	Clu	17	85	5 1/2	10 1/2	5 3/4	GE	8
5.20		2.00	3.80	Own D8	4	6-5 3/4 x8	1246	1200	79.4	I	7	3 3/4		D	N		Own	Don	Own	P	Pu	Own	TO	SG		14 1/4	15	1015	Clu	25	118	8 1/2	8 3/4	5	GE	9
5.00	6.70	1.60	6.70	Own D9	4	6-6 1/4 x8	1473	1200	93.6	I	7	4 1/2		D	N		Own	Don	Own	P	Pu	Own	FO	SG					Clu	35	157	9	13	13 1/2	GE	10
		1.75		Own 40	4	2-4x4	101	1850	12.8	I	2	2 3/8		G	D	DR	Mar	Don	Own	P	TS	Aub	SP	SG		9 1/4	6 3/8	1267	Clu	3 1/2	10	5	6 1/2	1 3/4 ‡	Ele	11
		1.75		Own 420	4	2-4 1/4 x4	113	1850	14.5	I	2	2 1/2		G	TF	DR	Mar	Don	Own	P	Pu	Aub	SP	SG		9 1/4	6 3/8	1270	Clu	2 3/4	10 1/2	5	6 1/2	1 3/4	Ele	12
		1.80	†	GM■ 6-71	2	6-4 1/4 x5	426*	1800	43.4	I	7	3 1/2		O	N		GM	Ver	GM	P	Pu	All*				N			*	28*	74*	20*	140*	36*	Ele	13
5.41		1.73		Own 6	4	4-3 7/8 x5 1/4	248	1450	24.0	I	3	2 1/2		G	D,K	Own	Own	Don	Own	P	Pu	Roc	SP	SG		11	8 1/2	811	Clu	9 1/2	20	9	16	1	Ele	14
5.41		1.73		Own D6	4	4-3 7/8 x5 1/4	248	1450	24.0	I	5	3 3/4		O			Own	Don	Own	P	Pu	Roc	SP	SG		11	8 1/2	811	Clu	10 1/2	20	9	16	1	Ele	15
5.30		1.75		Own D9	4	4-4 1/2 x5 1/2	335	1400	31.0	I	5	4 1/2		O			Own	Don	Own	P	Pu	Roc	SP	SG		11	8 1/2	878	Clu	13	31	11	22	1 1/2	Ele	16
4.10	5.30	1.50	3.20	Own D-14A	4	4-4 3/4 x6 1/2	460	1400	36.1	I	5	3 1/4		O			Own	Uni	Own	P	Pu	Roc	SP	SG		11 3/4	11	875	Clu	19	61	16	24	7 1/2	Ele	17
4.50	5.50	1.60	3.40	Own D-18A	4	6-4 3/4 x6 1/2	691	1450	54.1	I	7	3 1/2		O			Own	Uni	Own	P	Pu	Roc	SP	SG		11 3/4	11	844	Clu	26	75	26	30	10	Ele	18
4.20	▲▲	‡‡	‡‡	Own D24	4	6-5 3/4 x7	1091	1400	79.3	I	7	4 1/2		O			Own	Uni	Own	P	Pu	Roc	DP	SG		N			PL	38	135	30	192	21	Ele	19
		2.70	*	Own D24	4	6-5 3/4 x7	1091	1500	79.3	I	7	4 1/2		O			Own	Uni	Own	P	Pu	TD	TC	SG		N			PL	40	135	30	192	21	Ele	20
		2.33		Herc IXB3	4	4-3 1/4 x4	133	1700	18.9	L	3	2		G	K	Wi	Mar	Ver	Han	P	Pu	Lg	SP	SG		8 1/2	6 1/2	2310	Dif	2 3/4	12	5 1/2	8	3/4	HC*	21
		1.36		Cont F226	4	6-3 1/4 x4 5/8	226	1530	26.3	L	4	2 1/8		G	K	Bos	Til	Ver	Novi	P	Pu	Lg	DP	SG		10 1/2	8 1/2	1130	Dif	5	16	8	32	**	HC*	22
		1.36		Herc DQDC	4	4-4x4 1/2	226	1530	25.6	L	5	3		O			Bos	Ver	Bos	P	Pu	Lg	DP	SG		10 1/2	8 1/2	1130	Dif	5 1/2	18	13	32	**	Ele	23
		1.72	3.60	Herc JXLD	4	6-4x4 1/2	339	1750	38.4	L	7	2 1/2		G	K	DR	Mar	Ver	Pie	P	Pu	Lg	DP	SG		12	8 1/2	1034	Dif	6	35	7	32	14 ‡‡	Ele	24
		1.72	3.80	Herc DJYC	4	6-3 3/4 x4 1/2	298	1750	33.8	I	7	3		O			RM	Ver	Bos	P	Pu	Lg	DP	SG		12	8 1/2	1034	Dif	5	35	12	32	14 ‡‡	Ele	25
		1.72	3.82	Herc RXC	4	6-4 1/2 x5 1/2	529	1300	51.3	L	7	3		G		DR	Mar	Ver	Pie	P	Pu	Lg	DP	SG		13	11	958	Dif	10 1/4	30	12	52	**	Ele	26
		1.72	3.62	Herc DRXB	4	6-4 5/8 x5 1/4	474	1300	45.9	I	7	3 1/2		O			Bos	Ver	Bos	P	Pu	Lg	DP	SG		13	11	958	Dif	10 1/2	30	16	52	**	Ele	27
		1.83	3.53	Herc DFXE	4	6-5 1/4 x6	895	1500	75.9	I	7	4 1/2		O			Bos	Ver	Bos	P	Pu	Roc	OD	SG		N			Dif	16 1/2	66	34	104	16	Ele	28
5.15	8.85	1.92	3.31	Own OC6	4	6-3 7/8 x3 3/4	194	1600	26.3	I	4	2 1/2		G		DR	Mar	Ver	Own	Ps	Pu	Lg	SP	SG		10	6 3/4	1184	Dif	4 1/4	16 1/2	5	22	4 1/2	Ele	29
5.15	8.85	1.92	3.31	Own OC6	4	6-3 7/8 x3 3/4	194	1600	26.3	I	4	2 1/2		O			Bos	Ver	Bos	Ps	Pu	Lg	SP	SG		10	6 3/4	1184	Dif	4 1/4	16 1/2	5	22	4 1/2	Ele	30
		2.01		Cont F140	4	4-3 1/8 x4 3/8	140	1850	16.3	L	3	2 1/4		G	N	AL	Mar	Ver	Novi	P	Pu	Roc	SP	SG		8 1/2	6 1/2	1007	Dif	2 1/2	10	4	8	5 ‡‡	Ele	31
		2.01		Cont F140	4	4-3 1/8 x4 3/8	140	1850	16.3	L	3	2 1/4		G	N	AL	Mar	Ver	Novi	P	Pu	Roc	SP	SG		8 1/2	6 1/2	1007	Dif	2 1/2	10	4	8	5 ‡‡	Ele	32
		2.01		Cont F162	4	4-3 1/4 x4 5/8	162	1850	18.9	L	3	2 1/4		G	N	AL	Mar	Ver	Novi	P	Pu	Roc	SP	SG		8 1/2	6 1/2	1007	Dif	3	18	4	8	5 ‡‡	Ele	33
		2.17		Cont FA162	4	4-3 1/4 x4 5/8	162	2250	18.9	L	3	2 1/4		G	N	AL	Mar	Ver	Novi	P	Pu	Roc	SP	SG		8 1/2	6 1/2	1007	Dif	3 1/2	18	4	8	5 ‡‡	Ele	34
		1.71	●●	Cont F209	4	6-3 7/8 x5 3/8	209	2250	24.4	L	3			G	N	AL	Mar	Don	Novi	P	Pu	Lg		SG		N			Hyd	4	25	5	28	6 ‡‡	Ele	35

G—Gasoline.
GE—Independent gas engine.
GM—General Motors Corp.
Han—Handy Governor Corp.
HC—Hand crank.
HE—Hand crank or electric.
Herc—Hercules Motor Corp.
Hyd—Hydraulic power and pivot turns.
I—In head (Valves).
K—Kerosene.
L—"L" head (Valves).
Lg—Long Mfg. Div.
Mar—Marvel-Schebler Carburetor Div.
N—No or none.
Novi—Novi Equipment Co.
O—Diesel fuel.
OD—Over center, double plate.
Op—Optional.
P—Pressure.
Pie—Pierce Governor Corp.
PL—Planetary.
Ps—Pressure and splash.
Pu—Pump.
RM—Roosa-Master.
Roc—Rockford Drilling Machine Div.
SG—Spur gear.
SP—Single plate, dry.
TC—Torque converter.
TD—Twin Disc Clutch Co.
TF—Tractor fuel.
Til—Tillotsen Mfg. Co.
TO—Triple plate, operating in oil.
TS—Thermo-syphon.
Uni—United Specialties.
Ver—Vortex Mfg. Co.
Wi—Wico Electric Co.
Zen—Zenith Carburetor Div.

For Directory of Car Manufacturers listed above, see page 286

Military Cargo Vehicle Specifications

MODEL	Manufacturer	PAY-LOAD (Tons)		WEIGHT (Lbs.)		OVERALL DIMENSIONS (In.)			Axle Ground Clearance (In.)	ENGINE					Maximum Speed (Mph)	Max. Forging Depth (In.)	Cruising Range—Miles	TRANSMISSION				Differential—Type	Suspension—Type	SERVICE BRAKES		Wheelbase (In.)
		Cross Country	Highway	Empty	Fully Equipped	Width	Length	Height		Make	No. of Cylinders, Bore and Stroke	Displacement (Cu. In.)	Fuel Used	Cooling Medium	Max. Brake Hp. at R.P.M.				Make	Type	No. of Forward Speeds	No. of Reverse Speeds	Transfer Case			Actuated by	Type	
M38A1	WM	3/8	3/8	2,665	3,465	62	138 5/8	73 1/4	9 1/4	WM	4-3 1/8 x4 3/8	134.2	G	Liq	72-4000	60	72	200	WM	Co	3	1	2s	Co	SE	.....	Hd	81
M37	Do	3/4	1	5,950*	7,800*	73 1/2	189 3/4*	89 1/4	10 3/4	Do	6-3 1/4 x4 3/8	230.2	G	Liq	94-3200	55	72	225	Do	Co	4	1	2s	Co	SE	.....	Hd	112
M35	Reo	2 1/2	5	12,880*	18,230*	96	274 3/4*	111 1/8	10 5/8	Reo	6-4 1/2 x4 1/2	331.0	G	Liq	146-3400	62	72	280	Spi	Co	5	1	2s	Co	Bcp	Air	Hd	154
M211	GM	2 1/2	5	13,580*	18,930*	96	269 1/4*	112 1/8	12	GM	6-4x4	301.6	G	Liq	145-3400	58	72	300	GM	Hy	8	2	†	Co	Bcp	Air	Hd	156
M54	IH	5	10	19,945*	30,295*	97	314 1/4*	116	11 1/2	CM	6-4 7/8 x5 3/8	602.0	G	Liq	224-2800	53	72	214	Spi	Co	5	1	2s	Co	Bcp	Air	Hd	179
M8A1■	AC	7 1/2	.....	44,500*	63,000*	123 1/2	265 1/8*	120	18 1/2	CM	6-5 1/4 x5 1/2	859.9	G	Air	500-2800	41	60	180	GM	Cr	2	1	.....	.....	Inb	Md	Me	157 1/4 ‡
M76■	GM	1 1/2	.....	9,000	12,000	98	189	98 3/4	16 1/4	CM	4-4 5/8 x4	268.8	G	Air	127-3200	28	Am	160	GM	Cr	2	1	.....	.....	Inb	Md	Me	95 1/4 ‡

ABBREVIATIONS

*—With winch.
■—Tracked vehicles.
†—2 speed reduction unit on transmission.
‡—Track contact length.
2s—Two speed.
AC—Allis-Chalmers Mfg. Co.
Am—Amphibious.
Bcp—Bogie constant parallel arm (leaf springs).
Co—Conventional.
CM—Continental Motors Corp.
Cr—Cross drive.
Do—Dodge Division.
G—Gasoline.
GM—General Motors Corp.
Hd—Hydraulic.
Hy—Hydramatic.
IH—International Harvester Co.
Inb—Individual torsion bar.
Liq—Liquid.
Md—Multiple disc.
Me—Mechanical.
SE—Semi-elliptic.
Spi—Spicer Mfg. Div.
WM—Willys Motors.

FWD's 1956 Line of COE Trucks



One of the 12 new FWD COE trucks for 1956

for Heavy Duty Applications

THE 1956 line of FWD cab-over-engine trucks consists of 12 models designed for applications such as construction and maintenance of highways and utility lines, oilfield operations, and heavy construction hauling. All models have four wheel drive and range from 14,500 to 40,000 lb GVW. They are available in all 4x4 weight classifications and also may be obtained for special six-wheel-drive applications. The COE's range in engine horsepower from 131 to 240 and vary in transmission speeds from 4 to 10.

Standard engines for all models from 14,500 lb GVW to 36,000 lb GVW are the BD and RD gasoline-powered series; two 40,000 lb GVW models have GK series engines. Power plants of the new FWD's are easily accessible between the cab seats, where the "doghouse" cover need only be removed for working on the engine.

Standard center differential on all models is FWD's 50-50 power divider, which sends half the torque to the front driving wheels and half to the rear. A 1-to-2 power divider, proportioning torque one-third to front wheels and two-thirds to rear for trucks designed to meet special load requirements, is optional equipment in all but the smallest COE model.

The new FWD cab-over-engine trucks begin with the Model 140, smallest of the line at 14,500 GVW rating. This model has 142-in. wheelbase, BD-240 engine developing 131 hp, and Series T9 transmission with four forward speeds and one reverse.

All other 4x4 COE models have 154-in. wheelbase. These include Models 181, 182, 202, 232, 284, 285, 305, 326, 367, 408, and 409.

Models 181 and 182 are rated at 18,000 lb GVW and have Series F51C transmissions with five forward speeds, one reverse. Model 181 utilizes a BD-282 engine rated at 137 hp. Model 182 a BD-308 with 150 bhp. Model 202 with 20,000 GVW rating and Model 232 with 23,000 classification also have Series F51C transmission and BD-308 engine.

Models 284 and 295, rated at 28,000 lb GVW, have Series 5A43 transmission with five forward speeds, one reverse. Model 284 is equipped with an RD-372, 165-hp engine and Model 285 with RD-406, 175-hp engine.

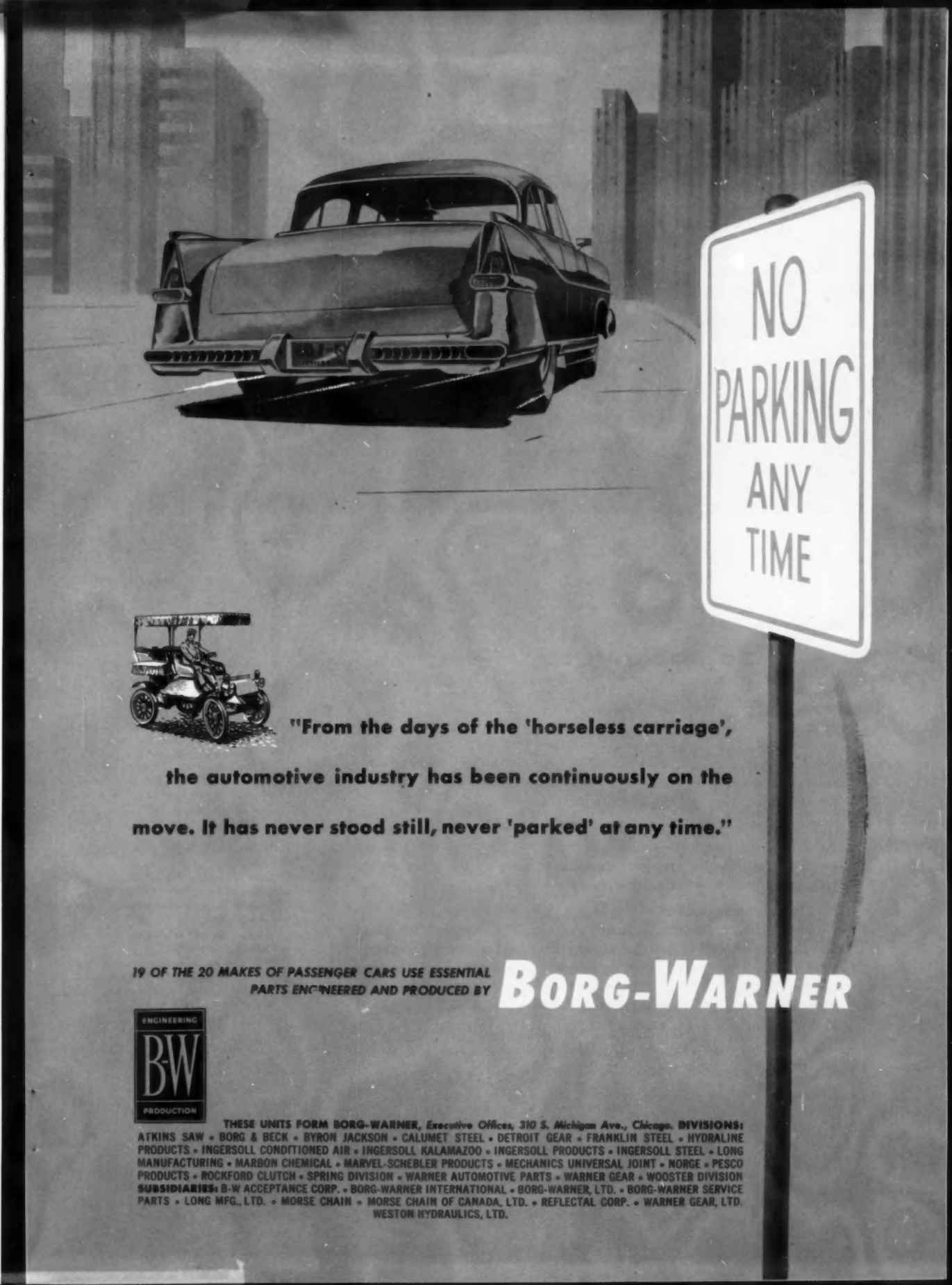
Model 305, with 30,000 GVW rating, has RD-406 engine and Series 5A62 transmission with five forward speeds, one reverse. Model 326, rated at 32,000. has RD-450 engine with 182 hp and a 5A62 transmission. Model 367, with 36,000 GVW, uses the 212-hp RD-501 engine and Series 5C65 transmission with five forward speeds, one reverse. It is available with 10CA65 transmission, with 10 forward and two reverse speeds, if desired.

Standard engine in the Model 408, rated at 40,000 GVW, is the Series 145 GK with 216 hp. The Series 10A1120 transmission, with 10 forward and two reverse speeds, is standard on this model with the R95C transmission, also 10 speed but with progressive hi-low range, as optional.

Model 409, another 40,000 GVW truck, use the Series 145 GKB, 240-hp engine and either Series 10A1120 or R95C transmission.

All of the 12 cab-engines have FDW's tapered-front, heat-treated alloy steel channel frames.

The new cab-over-engine design of the 1956 FWD line features an all steel, deluxe cab with 92-in. outside width.



"From the days of the 'horseless carriage', the automotive industry has been continuously on the move. It has never stood still, never 'parked' at any time."

19 OF THE 20 MAKES OF PASSENGER CARS USE ESSENTIAL PARTS ENGINEERED AND PRODUCED BY **BORG-WARNER**

ENGINEERING B-W PRODUCTION

THESE UNITS FORM BORG-WARNER, *Executive Offices, 310 S. Michigan Ave., Chicago.* **DIVISIONS:** ATKINS SAW • BORG & BECK • BYRON JACKSON • CALUMET STEEL • DETROIT GEAR • FRANKLIN STEEL • HYDRALINE PRODUCTS • INGERSOLL CONDITIONED AIR • INGERSOLL KALAMAZOO • INGERSOLL PRODUCTS • INGERSOLL STEEL • LONG MANUFACTURING • MARBON CHEMICAL • MARVEL-SCHEBLER PRODUCTS • MECHANICS UNIVERSAL JOINT • NORGE • PESCO PRODUCTS • ROCKFORD CLUTCH • SPRING DIVISION • WARNER AUTOMOTIVE PARTS • WARNER GEAR • WOOSTER DIVISION **SUBSIDIARIES:** B-W ACCEPTANCE CORP. • BORG-WARNER INTERNATIONAL • BORG-WARNER, LTD. • BORG-WARNER SERVICE PARTS • LONG MFG., LTD. • MORSE CHAIN • MORSE CHAIN OF CANADA, LTD. • REFLECTAL CORP. • WARNER GEAR, LTD. WESTON HYDRAULICS, LTD.



"no parking any time"

In a very real sense, this well known traffic sign admirably sums up the history of the automotive industry. From the first struggling days of the "horseless carriage", the industry has been continuously on the move. It has never stood still, never "parked" at any time.

Today the automotive industry is truly the pace setter of American business. Its vitality has never been more evident, its engineering, styling and performance achievements never so exciting, its future never so promising.

Borg-Warner is proud of its long, close and continuing association with the automotive industry . . . proud of its engineering and production contributions to automotive performance, economy and safety. The partial list shown here reads almost like a history of the development of the automobile. Each is an example of Borg-Warner's guiding principle, "Design it better—make it better." And each is a promise of future achievement.

So long as the industry looks ahead, thinks ahead and moves ahead, there will continue to be "no parking at any time."

Roy D. Ingersoll

PRESIDENT
BORG-WARNER CORPORATION

MILESTONES ALONG THE WAY

1900—The old time mixing valve was replaced by SCHEBLER carburetors.

1903—Radiators made of copper tubing with attached cooling fins introduced by LONG.

1913—The single plate clutch was developed by BORG & BECK, and silent timing chains were introduced by MORSE CHAIN.

1916—Universal joints were developed by MECHANICS.

1921—First standard type transmissions were introduced by WARNER GEAR.

1922—Double plate clutches were introduced by LONG.

1923—Multiple spring clutches were developed by ROCKFORD.

1924—Vibration dampening flexible center clutches introduced by BORG & BECK.

1930—Transmission synchronizer units produced by WARNER GEAR.

1931—Free wheeling was introduced to the industry by WARNER GEAR.

1934—Automatic overdrives for transmissions were introduced by WARNER GEAR.

1938—Borglite and Torbend clutch plates were introduced by BORG & BECK, LONG and ROCKFORD.

1949—Simpler, finer, more efficient automatic transmissions were introduced by DETROIT GEAR and WARNER GEAR.

1952—LP-Gas carburetion systems developed by MARVEL-SCHEBLER.

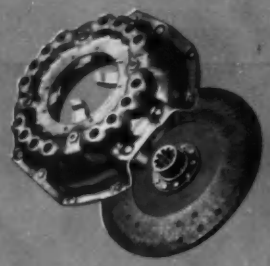
1953—Passenger car power brakes developed by MARVEL-SCHEBLER.

QUIETER OPERATION

SMOOTHER PERFORMANCE

BETTER SERVICE

LONGER LIFE





For more than 35 years the Automotive Industry has found you can always depend on clutches by

BORG & BECK®

For that vital spot where Power takes hold of the load!

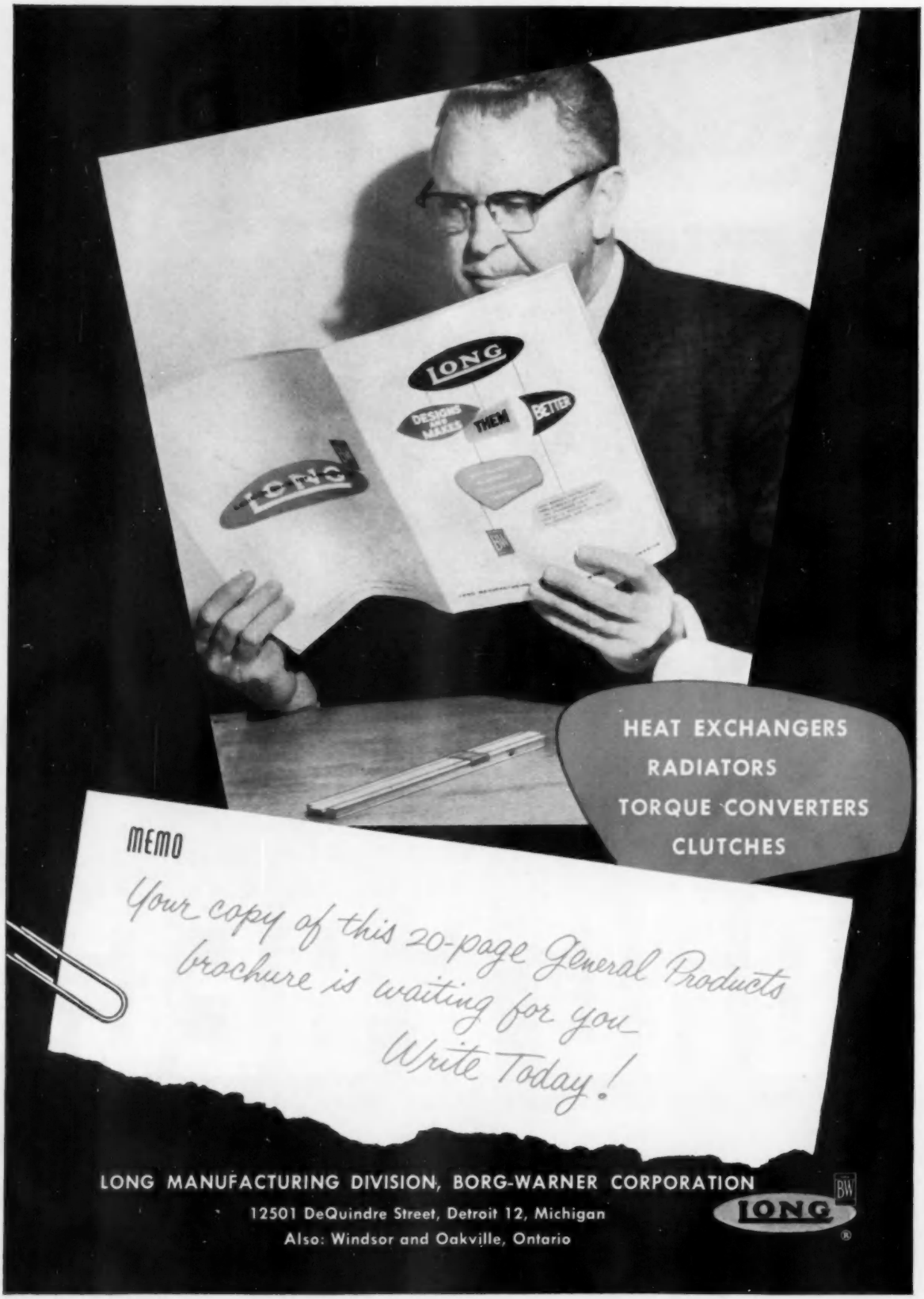
BORG & BECK CLUTCH · THE STANDARD · Reg. U.S. Pat. Off.

The Standard Clutch—A Product of Borg-Warner

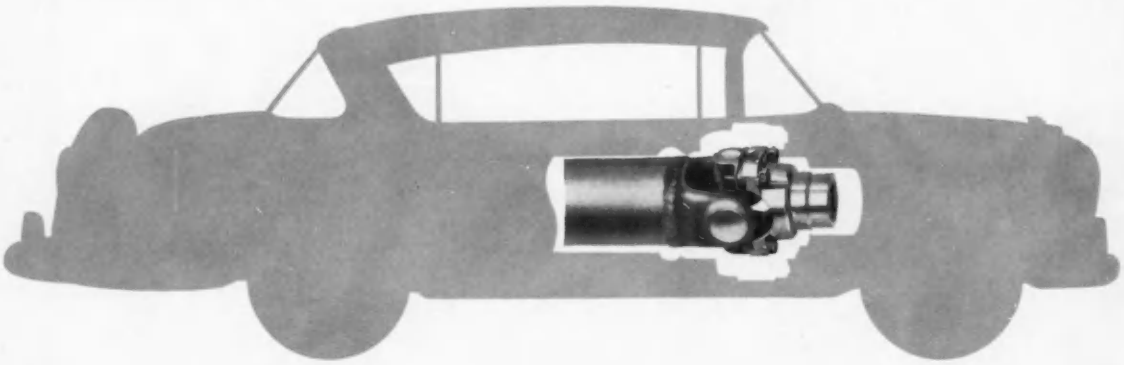
BORG & BECK Division

ENGINEERING B-W PRODUCTION

Borg-Warner Corporation
Chicago, Illinois


LONG
DESIGNS AND MAKES THEM BETTER
LONG
HEAT EXCHANGERS
RADIATORS
TORQUE CONVERTERS
CLUTCHES
MEMO
Your copy of this 20-page General Products brochure is waiting for you
Write Today!
LONG MANUFACTURING DIVISION, BORG-WARNER CORPORATION
12501 DeQuindre Street, Detroit 12, Michigan
Also: Windsor and Oakville, Ontario
BW
LONG

FIRST



FIRST to make an Automobile Joint smaller —(3-9/16″ swing diameter) to reduce the clearance needed by the low floor boards in modern cars.

FIRST to make the smaller joints stronger —(2500 lbs. ft. torque) to meet the needs of higher speed, higher power modern cars.

FIRST to make the smaller, stronger joints lighter—(20% less than other joints having the same torque capacity) to help designers keep overall weight down to modern standards.

FIRST to make the smaller, stronger, lighter joints easier to install—(less parts to handle) to save time and money on the assembly line.

Send a print and specifications of your new model for MECHANICS engineers' recommendations how you can give your next car the benefit of these four competitive advantages—provided by the new MECHANICS joint development.

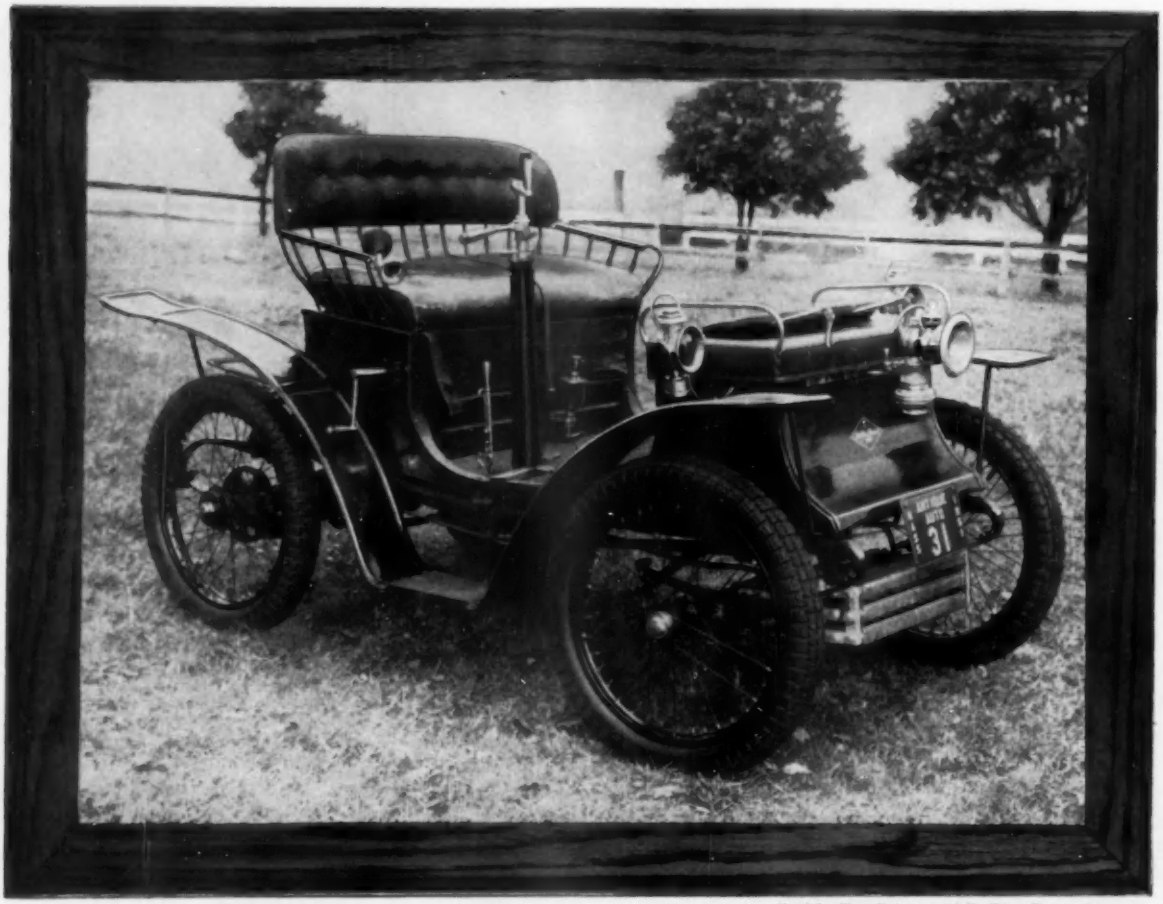
MECHANICS UNIVERSAL JOINT DIVISION
Borg-Warner • 2024 Harrison Ave., Rockford, Ill.
Export Sales: Borg-Warner International
79 E. Adams, Chicago 3, Illinois

MECHANICS

Roller Bearing BW

UNIVERSAL JOINTS

For Cars • Trucks • Tractors • Farm Implements • Road Machinery • Aircraft • Tanks • Busses and Industrial Equipment



Send for Free Print—1900 De Dion-Bouton Motorette. This print from the file of P. S. de Beaumont, not for commercial use.

The De Dion-Bouton is remembered today for the De Dion axle, a frame that contained the differential, which more recently many racing and sports car models have adopted. This model also employed a one-cylinder engine mounted in the rear with automatic intake valve. This is one of a series of antique automobile prints that will appear in future Morse advertisements. Write for your free copy, suitable for framing, to: MorseChainCompany,Ithaca,NewYork.

Why Morse Timing Chains are original equipment on 18 out of 22 automobiles

Morse Timing Chain Drives are now specified as original equipment on eighteen out of twenty-two makes of automobiles. This is true for several reasons:

(1) Morse Timing Chain Drives assure car, bus, and truck manufacturers of long, trouble-free service life—eliminate maintenance difficulties. (2) Morse Timing Chain Drives offer safe, quiet, and smooth operation, even when camshafts and crankshafts are not exactly parallel. (3) Speedy delivery of a complete line of timing chain drives helps to meet production schedules. (4) Morse offers expert engineering service to assist in solving automotive timing chain problems of design, development, and application.

Check with Morse on your timing chain problems. Find out, too, how well other Morse Power Transmission Products can answer your needs in product design and application. MORSE CHAIN COMPANY, DETROIT, MICHIGAN AND ITHACA, NEW YORK.

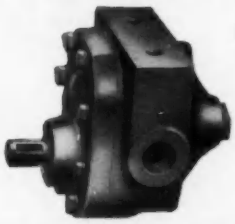
MORSE BW **CHAINS, CLUTCHES, AND COUPLINGS**

when better performance is a must, specify.... engineering Pesco production

You are assured of better performance plus economy when you design your products with hydraulic and electrical components from PESCO. On aircraft and industrial equipment, PESCO products provide continuous, uninterrupted operation despite severe conditions of shock, temperature, pressure, humidity and duty cycle.

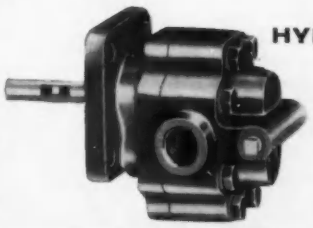
Standard product lines assure low first cost. Simplified and proven designs mean longer service life with a low lifetime cost. As a final guarantee of dependability, every PESCO product is performance-checked before shipment.

You are invited to bring your design problem to PESCO . . . or write for detailed product information.



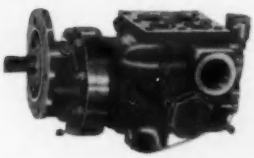
HYDRAULIC PUMPS

Single, dual and Cartridge† type, engine or electric motor driven for industrial and aircraft uses. Capacities from .7 to 60 gpm per element. Pressures to 4000 psi. "Pressure Loaded"* for higher efficiency and longer service life. †Trademark



HYDRAULIC MOTORS

Compact, gear-type, positive displacement motors for pressures to 1500 psi. Built for either rotation without mechanical adjustment. Starting torque efficiency over 90%.



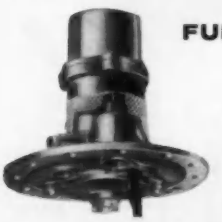
FUEL PUMPS

Vane type for aircraft reciprocating engines. High-pressure gear type for jet engines, designed to supply main, after-burner and emergency fuel needs. Gear type for commercial gas turbine engines.



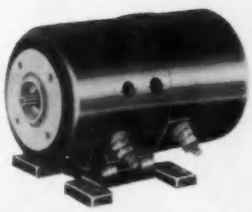
POWER PACKAGES

Optional components include: single or dual pump, control valves, relief valve, check-hold valve, reservoir. Engine or electric motor driven. Flow to 10 gpm, pressures to 1200 psi.



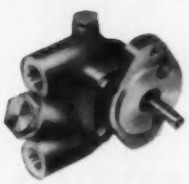
FUEL BOOSTER PUMPS

Centrifugal type. Tank mounted—submerged or external; line-mounted; or plug-in. Flow to 40,000 pph, pressures to 40 psi.



ELECTRIC MOTORS

Custom design with standardized parts for special applications. Maximum power with minimum size and weight. D-c and 400 cycle a-c types, 1/100 to 11 hp.



STEERING PUMPS

For heavy-duty power steering of trucks, buses and off-highway units. Built-in flow control and relief valve.



AXIAL FLOW BLOWERS

Advanced design, self-contained blowers with unmatched efficiencies. Space-saving "package" size. Single and multi-stage units for 27 v. d-c, 60 and 400 cycle a-c with capacities from 16 to 750 cfm and over (larger sizes in development).

*PESCO'S patented principle of gear pump construction.

PESCO PRODUCTS DIVISION
BORG-WARNER CORPORATION
24700 North Miles Road, Bedford, Ohio

BW

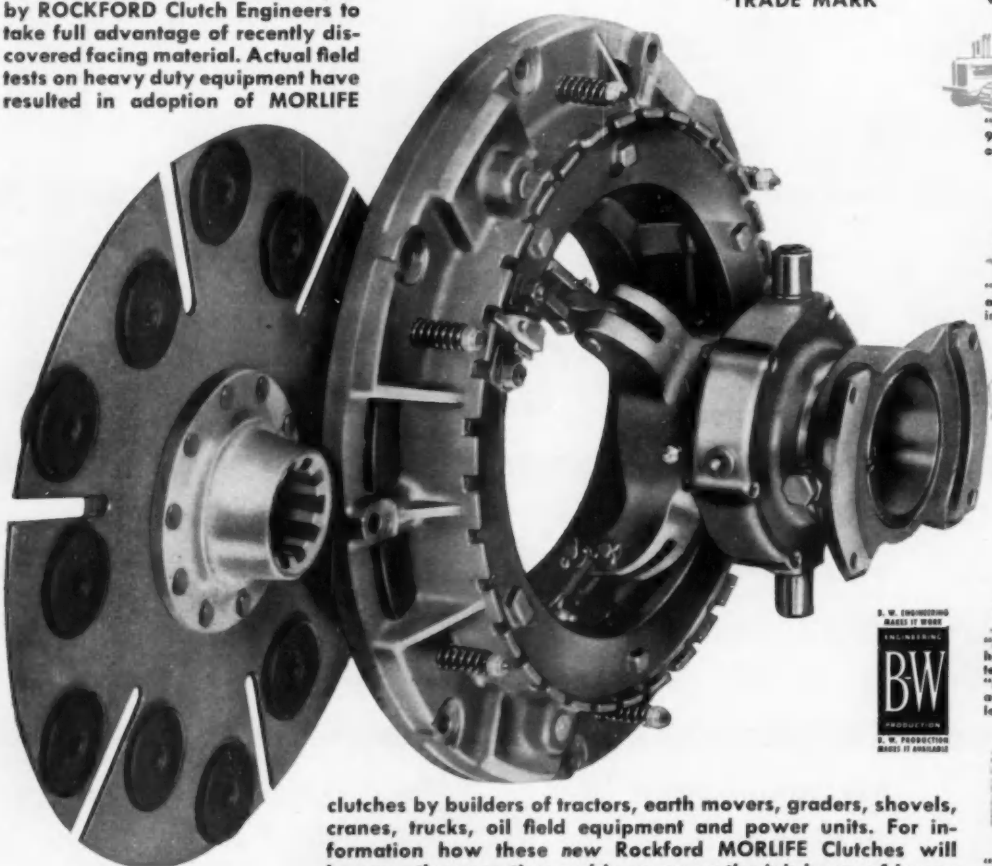
ROCKFORD

New MORLIFE* CLUTCHES and CLUTCH PLATES Give—

MORE Clutch Life (400% MORE)
MORE Torque Capacity (100% MORE)
MORE Heat Resistance (50% MORE)

These *new* ROCKFORD Clutches and Clutch Plates have been developed by ROCKFORD Clutch Engineers to take full advantage of recently discovered facing material. Actual field tests on heavy duty equipment have resulted in adoption of MORLIFE

*TRADE MARK





"MORLIFE clutch has gone 851 hours without slipping or adjustment."



"MORLIFE clutch going strong after 1695 hours, working in sand."



"MORLIFE clutches last 950 hours longer, without adjustment."



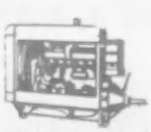
"MORLIFE clutch needs adjustment once a month, instead of daily."



"MORLIFE requires lighter handle pull and one tenth the adjustments."



"MORLIFE requires lighter handle pull and one tenth the adjustments." "MORLIFE pulls harder and lasts six to ten times longer."



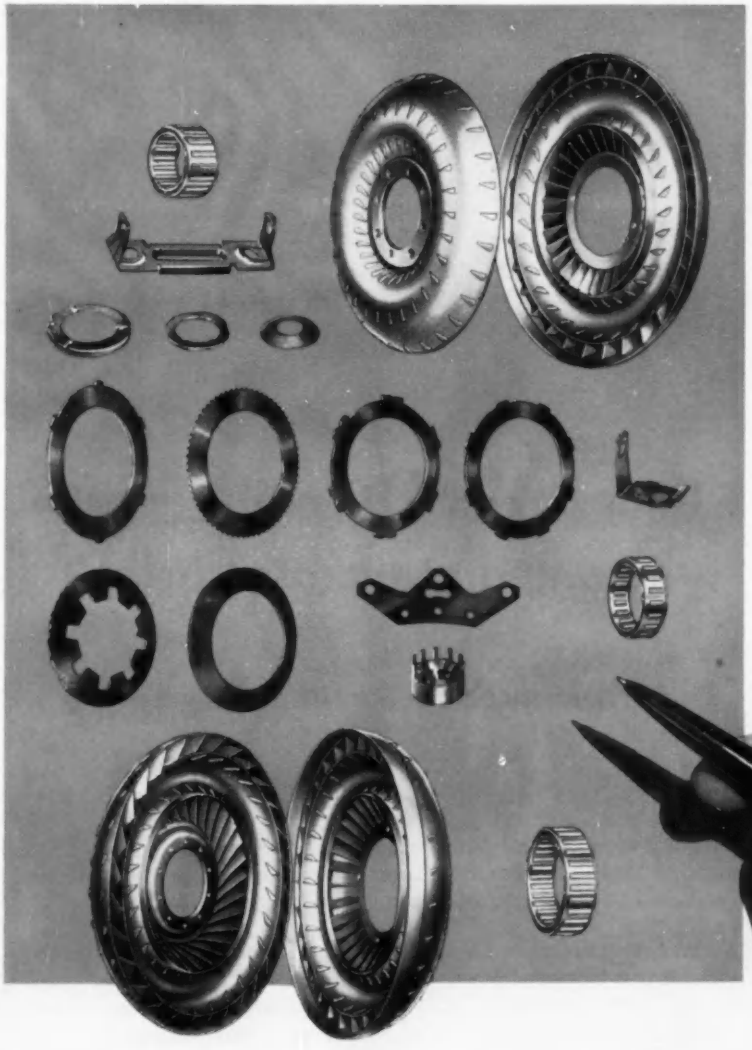
"Won't buy a unit that isn't equipped with Durable MORLIFE clutch."

clutches by builders of tractors, earth movers, graders, shovels, cranes, trucks, oil field equipment and power units. For information how these *new* Rockford MORLIFE Clutches will Improve the operation and increase on-the-job hours of heavy duty machines, write Department E.

ROCKFORD Clutch Division BORG-WARNER

315 Catherine Street, Rockford, Illinois, U.S.A.

CLUTCHES



STAMPED TORQUE CONVERTOR SUB-ASSEMBLIES

TRANSMISSION CLUTCH PLATES

SPRAG TYPE ONE WAY CLUTCHES

BELLEVILLE SPRINGS

STAMPINGS

MOULDED COMMUTATORS

SPRING CLIPS & FASTENERS



SPECIALISTS

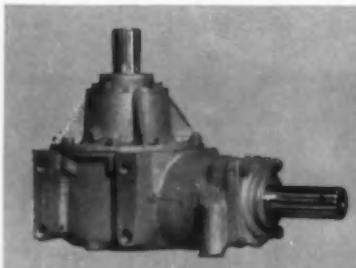
in the manufacture of automatic transmission components, one way clutches, stampings and stamped assemblies.

SPRING DIVISION

ENGINEERING B-W PRODUCTION

BORG-WARNER CORPORATION

BELLWOOD, ILLINOIS



Field or Brush Cutter Gear Box



Hay Baler Gear Box



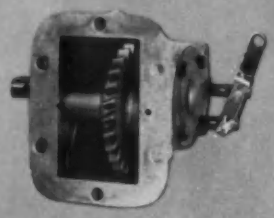
Field or Brush Cutter Gear Box



Combine Gear Box



Standard Power Take-off



High Speed Power Take-off



Hydraulic Power Take-off

Gear Box or PTO problem got you going around in circles?

turn it over to Warner Automotive

When it comes to gear boxes or power take-offs, come to Warner Automotive. You'll save time, needless expense and worry, get what you want, and chances are at less cost than you probably think.

Warner has pioneered in the design, engineering and precision production of gear boxes and power take-offs. Our research has whipped many a design problem you may be facing. Our manufacturing facilities, with specialized equipment, are more than ample to meet your production schedules *on time*.

Consult Warner Automotive—without cost or obligation.

WARNER GEAR BOXES. Outstanding for quality. Automotive type gearing; carburized and hardened alloy gears; anti-friction bearings throughout, individually selected for the load; integrally forged gear and shaft, wherever possible; malleable iron housings.

WARNER POWER TAKE-OFFS. Hydraulic, high speed, and single speed designs for pumps, hoists, electrical generators, dump truck bodies, refrigeration and other uses. Complete with controls and all fittings for fast, easy installation.

Also: Transmission Gears, Ring Gears and Pinions, Differential Parts, Axle Shafts and Parts

"Products of Experience"

WARNER AUTOMOTIVE PARTS DIVISION

Borg-Warner Corporation

AUBURN • INDIANA

ENGINEERING B-W PRODUCTION



Ingersoll Steel

A DIVISION OF BORG-WARNER

a good name to Know... a good place to Go

for the Special Steels you need

- *Alloy Steels*
- *Armor plate*
- *Carbon electric steel for tank clutch discs*
- *Clutch plate steels*
- *Heat-resisting steels*
- *IngAclad stainless-clad steel*
- *Knife steels*
- *Saw steels, including high speed hack saw blade steels*
- *Shovel steels*
- *Soft center steel*
- *Stainless steels*
- *Tem-Cross steel*
- *Tillage steels*

INGERSOLL STEEL B-W BORG-WARNER

Ingersoll

STEEL DIVISION

* *Borg-Warner Trade-Mark*

BORG-WARNER CORPORATION

New Castle • Indiana

Specialists in Special Purpose Steels

22 OF THE 32

BORG-WARNER DIVISIONS AND SUBSIDIARIES

Serve the automotive industry



BORG & BECK—clutches and torque converters for passenger cars, trucks and tractors.

BORG-WARNER INTERNATIONAL—export sales of automotive parts.

BORG-WARNER, LTD. (England)—Automotive timing chains and sprockets.

BORG-WARNER SERVICE PARTS—U. S. distribution of automotive service parts.

CALUMET STEEL—special automobile jack bar steel; small angles for auto seats.

DETROIT GEAR—automatic transmissions for passenger cars and trucks; truck, tractor and bus transmissions; gears and precision parts for passenger cars, trucks, tractors and aircraft.

FRANKLIN STEEL—special automobile jack bar steel; spring steel bumper supports; small angles for auto seats.

INGERSOLL PRODUCTS—tapered steel discs for truck wheels; automotive stampings; bumper and stabilizer bars.

INGERSOLL STEEL—automotive and tractor clutch discs; carbon electric steel for tank clutch plates; high carbon and alloy steel sheets; stainless and stainless-clad sheets and armor plate.

LONG MANUFACTURING—clutches and radiators for passenger cars, trucks, buses and tractors; torque converters; oil coolers for the automotive industry.

LONG MANUFACTURING CO., LTD. (Canada)—Clutches and radiators for passenger cars, trucks, buses and tractors; oil coolers for the automotive industry.

MARBON CHEMICAL—adhesives for bonding rubber and synthetic rubber to metal and other materials (trade name Ty-Ply).

MARVEL-SCHEBLER PRODUCTS—carburetors for military and industrial equipment and farm tractors; LPG carburetion systems; power brakes for passenger cars and trucks.

MECHANICS UNIVERSAL JOINT—universal joints and propeller shafts for passenger cars, trucks, buses, aircraft, farm machinery, tractors, road machinery and mining machinery.

MORSE CHAIN CO.—automotive timing chains and sprockets.

MORSE CHAIN OF CANADA, LTD.—automotive timing chains and sprockets.

PESCO PRODUCTS—electric driven and engine driven hydraulic pumps; valves and electric motors for agricultural and industrial use.

ROCKFORD CLUTCH—spring-loaded and over-center clutches for automobiles, trucks, tractors, road-building, earth-moving and oil field machinery, industrial machinery, agricultural implements, machine tools (Pullmore). Power take-off and gear reduction units for gasoline and diesel engines.

SPRING DIVISION—torque converter parts and sub-assemblies; sprag type free wheeling clutches; special clutch plates and parts for automatic transmissions; precision flat and Belleville type springs; automobile clutch and valve springs; multislide and punch press stampings, plain and heat treated; special commercial heat treating; small electric motor commutators.

WARNER AUTOMOTIVE PARTS—for replacement purposes—ring gears and pinions; differential cases; differential internal gears and spiders; axle shafts; cast iron parts; transmission gears for passenger cars, trucks and tractors; power take-offs.

WARNER GEAR—automatic transmissions for passenger cars; standard transmissions for cars, trucks, taxicabs, buses and tractors; overdrive units for passenger cars; transfer drive transmissions for trucks; synchronizer units for passenger cars and trucks; parking brake assemblies.

WARNER GEAR CO., LTD. (Canada)—synchronizer units for passenger cars and trucks.

ENGINEERING B-W PRODUCTION

BORG-WARNER CORPORATION

310 SOUTH MICHIGAN AVENUE—CHICAGO 4, ILLINOIS

AUTOMATIC TRANSMISSIONS
Create Huge Market for Parts and Material

By Thomas Mac New

Material Required
for Passenger Car Automatic Transmissions
1955 MODEL YEAR

CONVERTER ASSEMBLY

Parts	Weight (lb) Per Unit	Weight (lb) Total Industry	Items (pcs) Per Unit	Items (pcs) Total Industry
Steel Stampings	40.5122	226,868,320	90	504,000,000
Die Cast Converter Housing	9.5000	53,200,000	1	5,600,000
Screw Machine Parts	2.6847	15,034,320	1	5,600,000
Alloy Forgings	2.5900	14,504,000	2	11,200,000
Aluminum Die Castings	0.2000	1,120,000	2	11,200,000
Hardware	0.1244	696,640	14	78,400,000
Cast Brass and Bronze Parts	0.1013	567,280	1	5,600,000
Total	55.7126	311,990,560	111	621,600,000

Source: Per unit column figures supplied by T. J. Ault, president, Long Mfg. Div. of Borg-Warner Corp. for typical automatic transmission.

TRANSMISSION ASSEMBLY

Parts	Weight (lb) Per Unit	Weight (lb) Total Industry	Items (pcs) Per Unit	Items (pcs) Total Industry
Grey Iron Castings	112.0348	627,394,880	15	84,000,000
Steel Forgings	38.5600	215,936,000	13	72,800,000
Steel Stampings	20.4055	114,270,800	66	369,600,000
Bar Stock	11.3065	63,316,400	18	100,800,000
Tubing	10.0900	56,504,000	9	50,400,000
Screw Machine Parts	6.3107	41,339,920	59	330,400,000
Die Cast Extension Housing	5.5000	30,800,000	1	5,600,000
Hardware Items	5.1094	28,612,640	123	688,800,000
Misc. Assemblies Purchased	4.7388	26,526,080	7	39,200,000
Bronze and Copper Parts	3.3510	18,765,600	23	128,800,000
Aluminum Die Castings	3.2394	18,140,640	6	33,600,000
Bearings	2.0627	11,551,120	16	89,600,000
Springs and Snap Rings	0.8647	4,842,320	52	291,200,000
Seals and "O" Rings	0.7012	3,926,720	16	89,600,000
Gaskets	0.2494	1,396,640	20	112,000,000
Total	224.5221	1,257,323,760	444	2,486,400,000

OVER 3 billion parts, weighing approximately 1.6 billion pounds, went into automatic transmissions for 5.6 million of the 8 million passenger cars produced in the 1955 model year. This terrific acceptance by the American consumer, worth $840 million in wholesale price to the automobile makers, has established a tremendous market for raw material, original equipment, and aftermarket suppliers.

This huge market for raw material and basic parts is just a part of the story. There is a tremendous investment required for plant and equipment, as well as labor to produce the end product. Plant and equipment alone are estimated at over $300 million just for the manufacture of passenger car automatic transmissions. On top of this is the replacement market for machine tools, industrial trucks, conveyors, and a host of other allied production equipment items. And, we can add to this the large investment required by the industries supplying raw materials for the program.

In grey iron alone, the passenger car industry consumed more than 313,000 tons of castings for original equipment automatic transmissions. Over 170,000 tons of steel stampings, representing some 873 million parts, were used for transmission and converter assemblies. Even such small part items as gaskets, "O" rings, and seals accounted for 5.3 million pounds and more than 200 million parts. Hardware items, by far, lead the total parts count with more than 767 million pieces. There were more than 291 million springs and snap rings utilized by the industry and 336 million screw machine parts. Die castings took over a 103 million pound bite out of the aluminum industry's yearly production.

According to T. J. Ault, president, Long Mfg. Div., Borg-Warner Corp., there are 444 parts weighing 224.5 lb in the transmission assembly and 111 parts weighing 55.7 lb in the converter assembly of a typical automatic transmission. This adds up to a terrific materiel potential when it is considered that automatic transmissions, now more conventional by acceptance than the syncromesh type as indicated by the 70 per cent use of the 1955 model cars, will without doubt be standard equipment on all but a few of American cars, trucks, buses, and off-the-highway equipment in the not too distant future.

It should be remembered that the figures given here do not include the value or weight of material for the many thousands of automatic drives used for trucks, buses, off-the-highway equipment, or industry; nor do they represent the huge replacement parts production for the year.

(*Turn to page* 402, *please*)

NEW V-LOCK TEENUTS®

PATENT APPLIED FOR

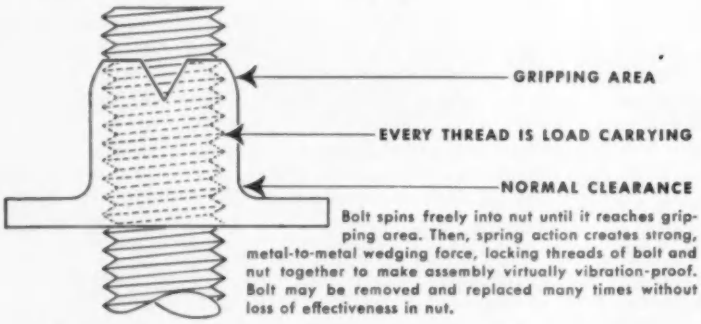


- **self-locking**
- **vibration-proof**
- **one-piece construction**
- **proven effectiveness**
- **highly adaptable**
- **re-usable**

The upper portion of this precision-made Teenut incorporates a V-type notch with the circumference of the barrel compressed inwardly toward the axis to form a permanent set. This makes it a re-usable, prevailing-torque-type, self-locking nut.

It is a one-piece, self-contained unit in which the self-locking device is an integral part of the design. No non-metallic materials or stamped parts are used so that the V-lock Teenut is not affected by heat or oils and has high tensile strength.

As the V-lock Teenut does not rely on base load to obtain its friction grip, it may also be used as a stop nut. (Indentations in base flange are welding bosses).



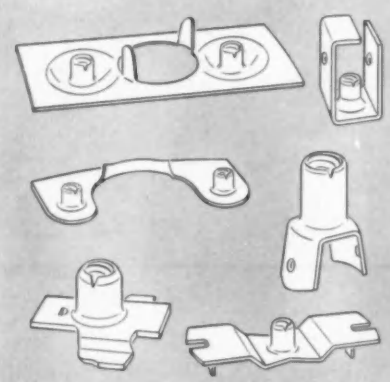
Bolt spins freely into nut until it reaches gripping area. Then, spring action creates strong, metal-to-metal wedging force, locking threads of bolt and nut together to make assembly virtually vibration-proof. Bolt may be removed and replaced many times without loss of effectiveness in nut.

The V-lock Teenut is but one of thousands of special purpose fasteners designed and manufactured by United-Carr to help speed assembly, cut costs and improve product performance. For further information on the V-lock Teenut or for help with any other fastening problem, consult your nearest United-Carr field representative or write us for his name and address.

UNITED-CARR FASTENER CORPORATION

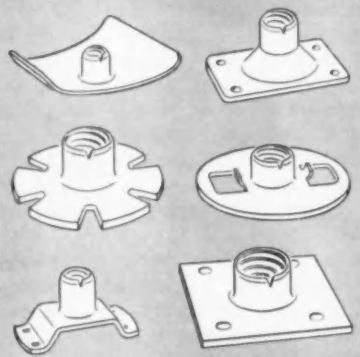
31 Ames Street Cambridge 42, Mass.

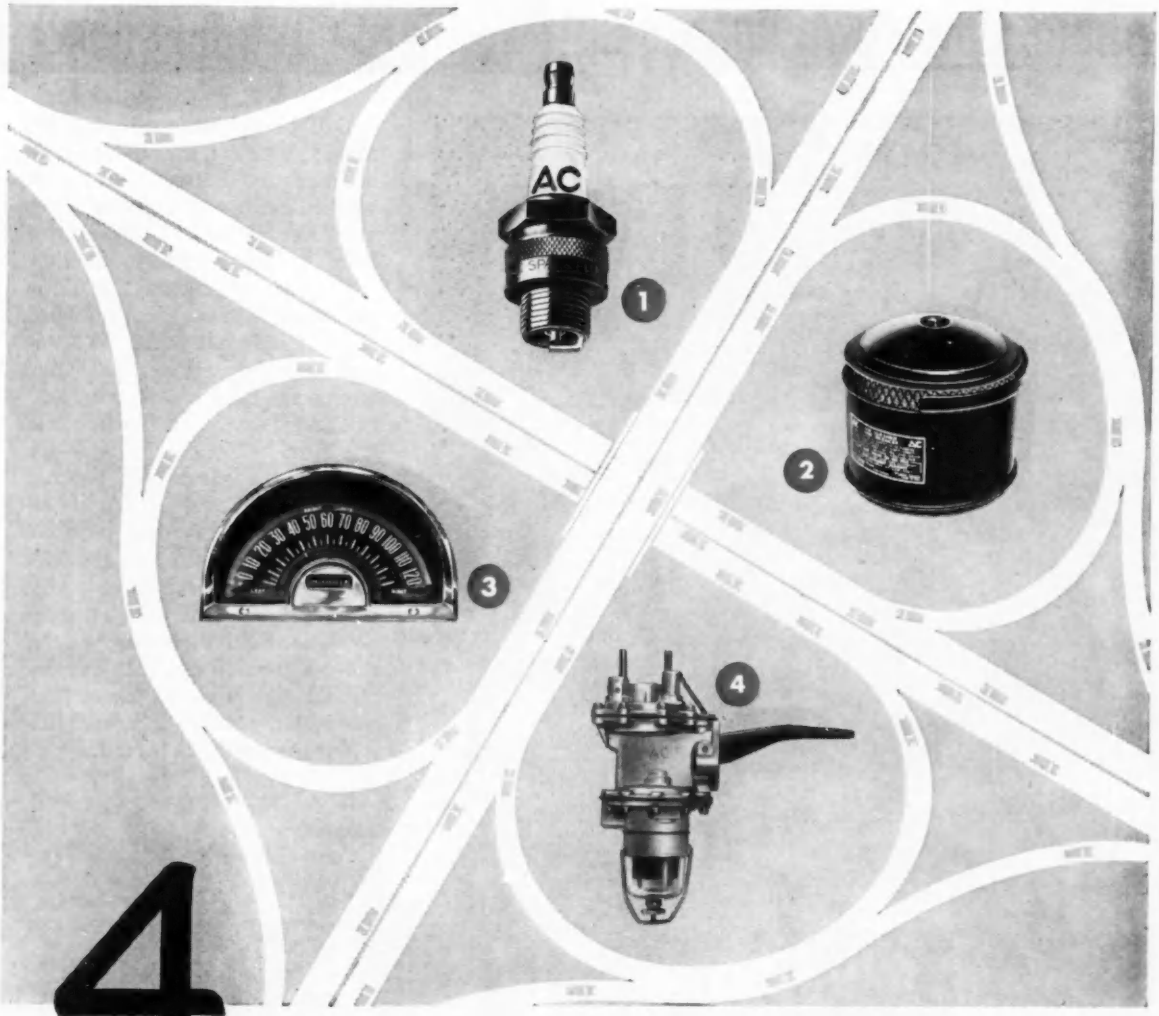
MAKERS OF DOT FASTENERS



UNLIMITED VARIETY

V-lock Teenuts can be engineered in various shapes and sizes to suit customer's specifications. Can be manufactured *in volume*... in brass, bronze, stainless steel, aluminum, etc.... with unified screw threads, class 2B, in both coarse and fine thread series. Finishes: zinc, cadmium, chrome, parkerized, etc. to customer's specifications.





4 Safety-Firsts by AC

1 Famous Hot Tip Spark Plugs

AC ignition engineers and AC ceramics technicians teamed to produce an insulator that could be recessed away from the center electrode to heat faster, burn away combustion residues that might otherwise deposit and foul the plug. These high-efficiency spark plugs contribute importantly to dependable power production—a factor in safe operation.

2 Air Intake Silencer

AC engineers were first to solve the problem of noise created by high-velocity air intake at the carburetor. By invention of the resonating-type silencer, AC succeeded in hushing such noise to an inaudible whisper. Gone was the nerve-fraying irritation that naturally made drivers less alert, cars less safe.

3 Red Warning Line Speedometer

To make the speedometer a strong visual warning device in addition to its merely indicating speed, AC engineers introduced the warning red line. In horizontal or circular application the theory was that the more red area shown as speed increased the more warning automatically registered in the interest of safety and caution.

4 Combined Fuel and Vacuum Pump

This instrument gives AC two "firsts" for greater safety. When AC introduced the mechanical fuel pump the dangers and uncertainties of gravity feed and manifold-vacuum feed were eliminated. Then AC added the Vacuum Pump, which cuts in to boost manifold vacuum, keep wiper action strong for clear, safe vision.

AC QUALITY PRODUCTS
GM GENERAL MOTORS

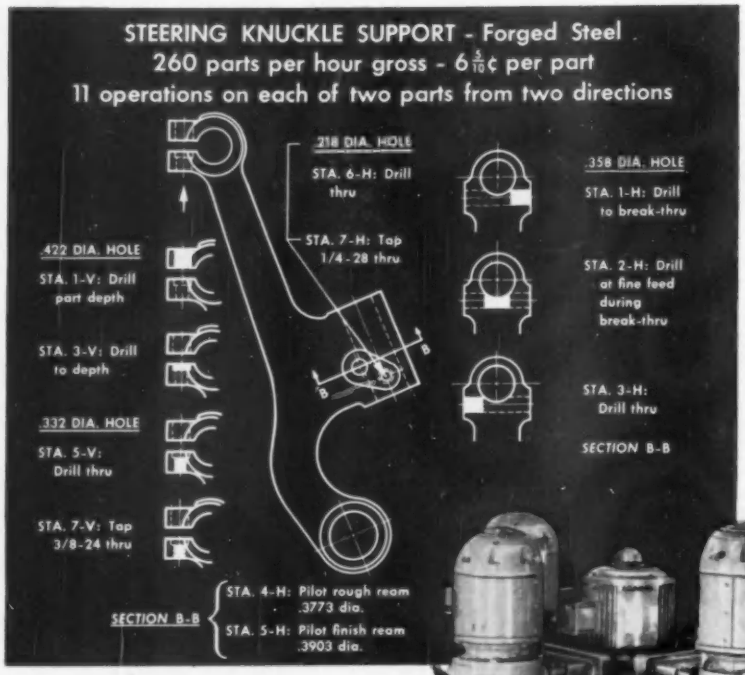
AC Know-How is Yours for the Asking

AC SPARK PLUG THE ELECTRONICS DIVISION OF GENERAL MOTORS

FLINT—1300 North Dort Highway • CHICAGO—Insurance Center Building • DETROIT—General Motors Building

ADAPTERS (DRIVE) • AIR CLEANERS • AIR CLEANERS AND SILENCERS (COMBINATION) • AMMETERS • BREATHERS (CRANKCASE) • CAPS (RADIATOR PRESSURE) • FLEXIBLE SHAFT ASSEMBLIES • FUEL PUMPS • FUEL AND VACUUM BOOSTER PUMPS (COMBINATION) • FUEL FILTERS & STRAINERS • GASOLINE STRAINERS • GAUGES—AIR (PRESSURE) • GAUGES—GASOLINE • GAUGES—OIL (PRESSURE) • GAUGES—TEMPERATURE (WATER, OIL) • OIL FILTERS (LUBE) • PANELS (INSTRUMENT) • RECIPROCATING VACUUM PUMPS • ROTARY VACUUM PUMPS • SPARK PLUGS • SPEEDOMETERS • TACHOMETERS • TERMINALS (IGNITION WIRE) • VALVES (CRANKCASE VENTILATION)

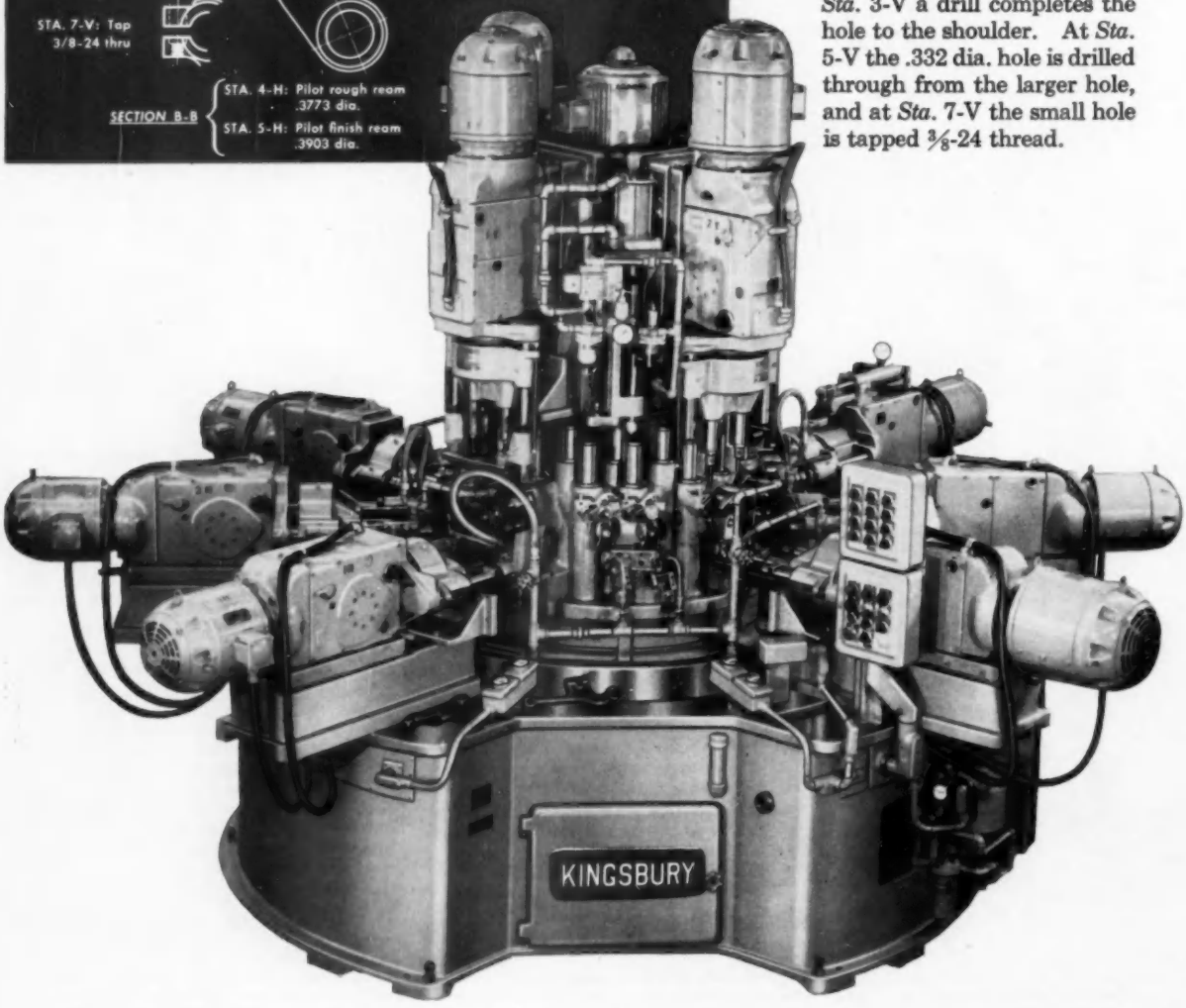
Where slow-down speeds-up "Operations Kingsbury"



Drill three holes, ream one, tap one . . . This *is* a simple job — for a Kingsbury, but the part must be worked on by 11 units at seven working stations to insure uniform accuracy and production.

In order to produce 260 pieces per hour gross, each work-holding fixture holds two parts, and each unit has an auxiliary head and works on a hole in each part.

The blueprint at the left tells the story. Notice the .422 dia. hole in the pinch-bolt bearing. This section required four operations from the *vertical* position: At *Sta.* 1-V the .422 hole is drilled through to the milled slot. At *Sta.* 3-V a drill completes the hole to the shoulder. At *Sta.* 5-V the .332 dia. hole is drilled through from the larger hole, and at *Sta.* 7-V the small hole is tapped ⅜-24 thread.



for greater accuracy and higher production . . .

Now look at Section B-B, the .358 dia. *horizontal* hole. It has a break-through with the axis hole, and must be accurate. This work is accomplished at five stations. *Sta.* 1-H drills to the break-through at normal feed. *Sta.* 2-H drills *at fine feed* during the break-through. *Sta.* 3-H completes the drilling at normal feed. At *Stas.* 4-H and 5-H, pilot reamers rough- and finish-ream the hole to exact specifications.

The .218 dia. hole involves simple drill-thru and tap operations, at *Stas.* 6-H and 7-H.

Each Kingsbury machine is designed and built to achieve three prime objectives: 1) *accurate* interchangeable parts as specified, produced at the 2) highest practicable production rate, and 3) at a cost per part which will make the machine a wise investment. And each Kingsbury machine proves itself in a trial run before it is delivered.

Combined operations promote savings in equipment, and lower costs per part

When we designed the Kingsbury machine shown below, we estimated its production at 250 parts per hour gross. We were low: it's producing 308 parts per hour gross, at 2 $^{4}/_{10}$c per part.

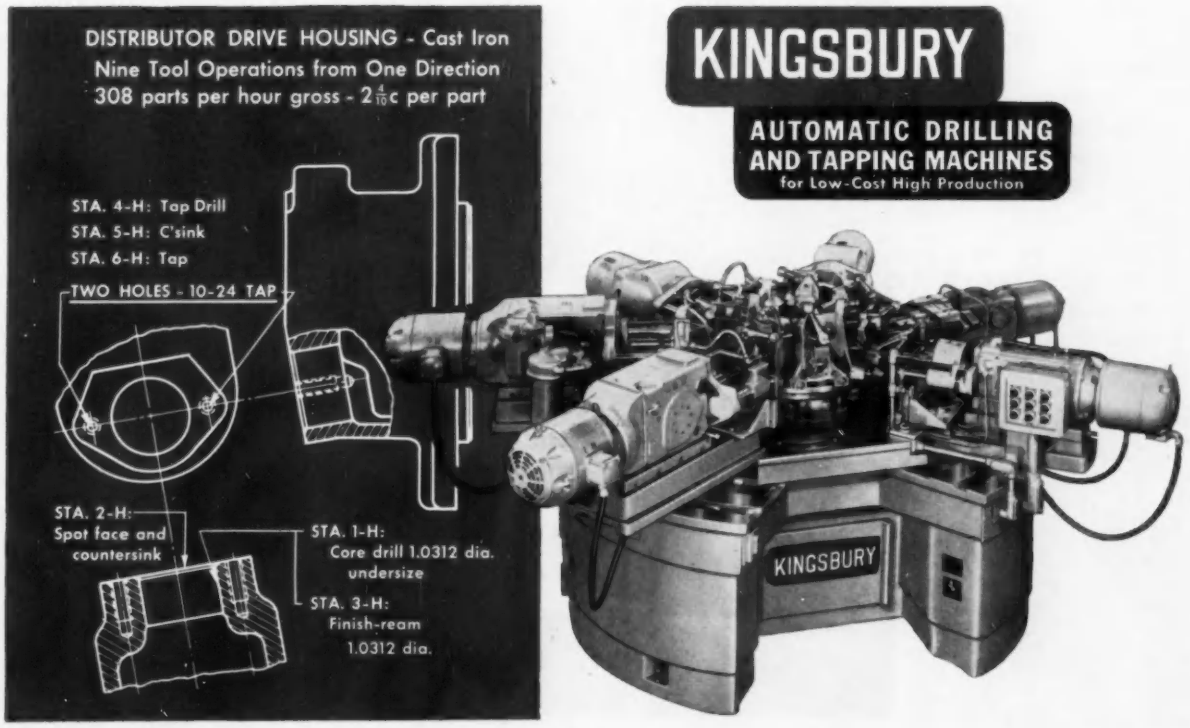
The machine has an 80-inch base on which are mounted six drilling and tapping units. A 24-inch index table with seven work-holding fixtures indexes through seven stations — one for loading and unloading.

All work is performed horizontally. The 1.0312 dia. hole is core-drilled undersize at *Sta.* 1-H, and finish-reamed 1.0312 at *Sta.* 3-H. *Sta.* 2-H spot-faces the joint face and forms countersink.

At *Stas.* 4, 5, 6, the Kingsbury units are equipped with auxiliary heads and drill, countersink and tap (10-24) the two small holes.

This Kingsbury is a good example of the savings in equipment and time which result when operations can be combined without risking uniformity. And, as is true with all Kingsburys, one of the big "secrets" of its success is the design of the work-holding fixtures. A part must be positioned in a matter of seconds, and held securely at each station, if the work is to be accurate. Therefore, the work-holding fixture is the very *heart* of a Kingsbury, and it's built with loving care! Perhaps that's one reason why Kingsburys perform so well!

Kingsbury Machine Tool Corp.
115 Laurel Street
Keene, N. H.



Quality



The quality of an automobile is determined to a great extent by the quality of its component parts.

We are proud of the fact that for over 36 years we have been producers of high quality automobile gasoline tanks that have passed rigid performance tests.

Gasoline Tank for Continental Mark II



O. L. ANDERSON CO.

INCORPORATED

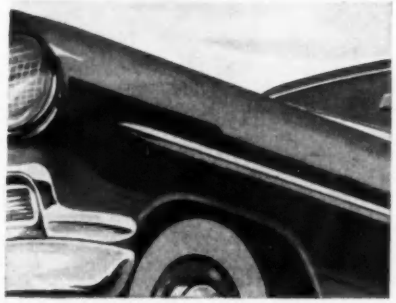
1347-87 EAST FORT STREET · DETROIT 7, MICHIGAN

Manufacturers of

Fuel Tanks and Sheet Metal Assemblies for the Automotive Industry

A nut, washer and sealing gasket ALL IN ONE!





DAREX Flowed-in Gaskets

are streamlining traditional methods of attaching chrome trim to automobiles.



Contrasted with the laboriously slow method of hand assembling gasket to trim fastener, the DAREX method automatically *pre*-gaskets the part by machine. So that now a single fastener — applied in a single operation — *fastens* the trim and *seals* the hole against seepage of dirt and moisture.

The DAREX "Flowed-in" Process is ingeniously simple. A DAREX gasketing compound is *machine-flowed* directly onto the fastener. This "flowed-in" compound is then cured to form a solid, rubbery gasket which becomes *integral* with the part. With nut, washer and gasket all in one unit, automobile manufacturers find assembly-line fastening of chrome trim much easier and quicker. And the finished job is neater, better, less costly than before!

If you have a problem involving a gasket, cushion, seal or vibration dampener, tell us about it. Perhaps the DAREX "Flowed-in" Process can help you increase production or quality of your product . . . and at the same time lower your labor and materials costs.

"H637 COMPOUND"

One of several standard DAREX "Flowed-in" compounds now being used by the automotive industry.

Base: Vinyl

Adhesion to metal: Excellent, no primer coat needed

Torque retention: Excellent

Staining: No migration staining

Temperature resistance: -20° to 250°F.

Aging: Excellent

Consistency: (Wet) Non-slumping paste (Dry) Rubbery solid

Curing time: 20 seconds

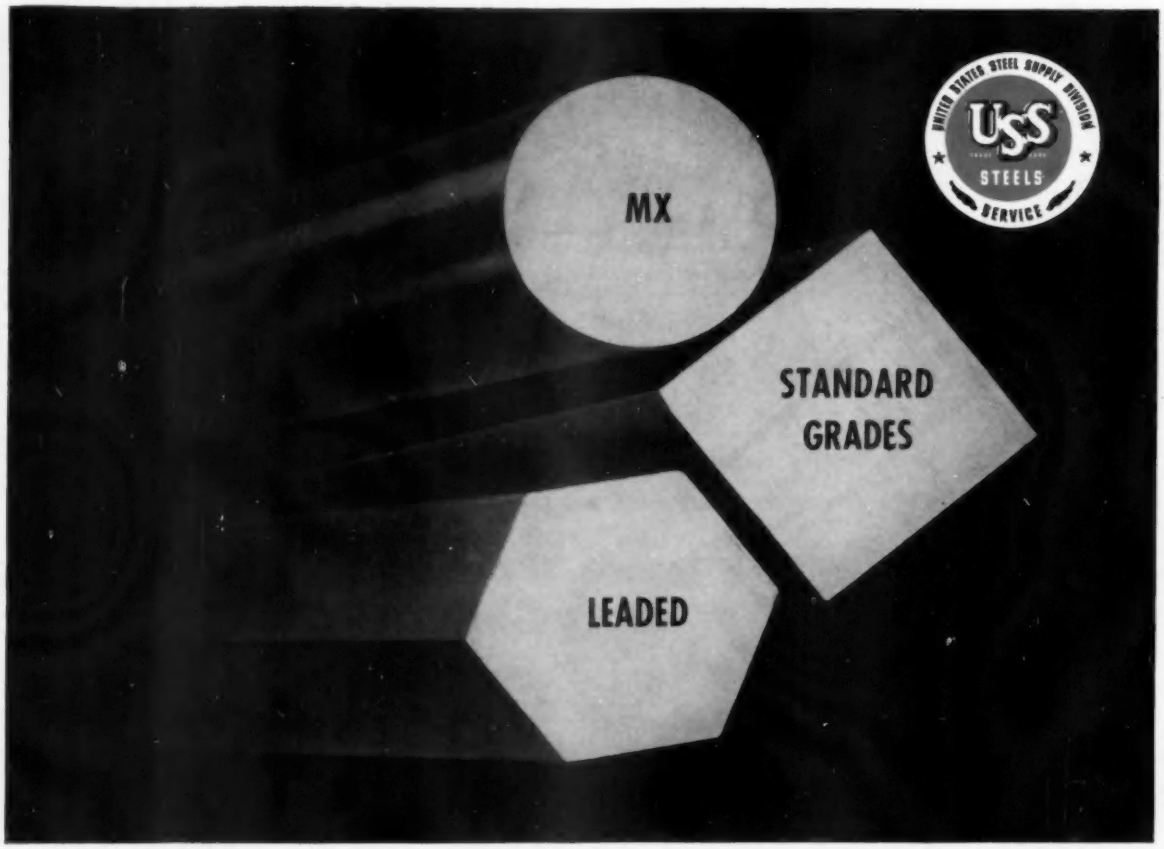
Uses: As a weather seal against water, dust and dirt

DESIGNED FOR THE AUTOMOTIVE INDUSTRY

The new DAREX No. 6 Compound Applying and Curing Machine applies and cures gaskets automatically at high speeds (up to 200 per minute on trim fasteners shown above.) Occupies only 17 sq. ft. of floor space. Write for further information today.

Dewey and Almy does not make the fasteners shown above. We supply their manufacturers with gasketing compounds and machines to apply them.

DEWEY and ALMY
Chemical Company
DIVISION OF W. R. GRACE & CO.
Cambridge 40, Massachusetts



You get the right COLD FINISHED BARS for your job!

Carbon, Alloy and Stainless Shapes . . . all available for immediate shipment. Our USS MX Free Machining bars have earned great popularity as one of the best high speed screw stocks because it cuts unit costs considerably . . . an average of 10% to 15%, sometimes as high as 42%. MX costs no more than B-1113 and it will increase your net production 20% or more.

LEADED Screw Stock, very fast machining, is especially economical on long production runs of small parts that require extensive machining.

Because U. S. Steel Supply carries all types, sizes, shapes and finishes, we can help you select the RIGHT Cold Finished Bars for your requirements—and the right quality is not always the most expensive.

U.S. STEEL SUPPLY DIVISION

General Offices: 208 So. La Salle St., Chicago 4, Ill. USS Warehouses and Sales Offices Coast to Coast

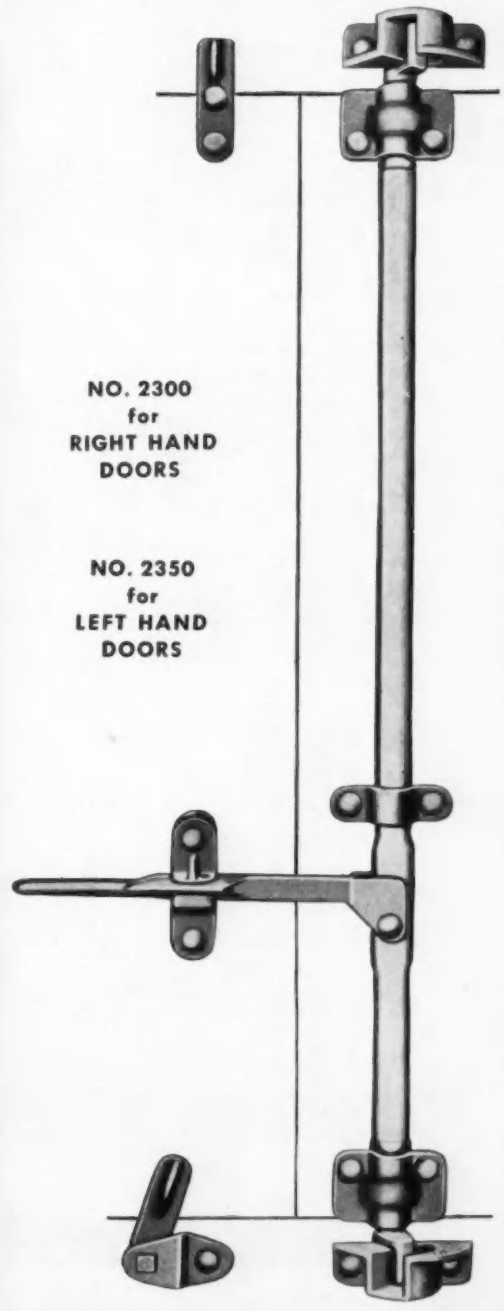
UNITED STATES STEEL

MINER TUBULAR BAR TYPE *Door Fasteners*

DROP-FORGED!

FOR TRUCK AND TRAILER BODIES

The Miner Truck Door Fastener, No. 2300, is applicable to all sizes of rear and side doors, either single or double, and is particularly desirable for refrigerator bodies. The highly dependable features of the Miner Bar Type Fastener which have always been widely accepted by the truck builders and operators have been retained in this new fastener. Refinements in the component parts have been accomplished by the drop-forging process, which permits the use of special carbon steels of unusual hardness in texture and vastly stronger and denser than the malleable iron product, thereby guaranteeing longer endurance in a service that demands reliability of operation. The vertical locking bar of scientifically designed oval section has the rigidity and torsional strength necessary to withstand the rugged operating conditions which exist at loading platforms.



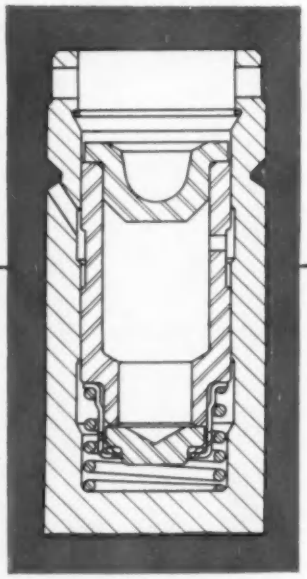
NO. 2300
for
RIGHT HAND
DOORS

NO. 2350
for
LEFT HAND
DOORS

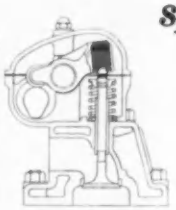
W. H. MINER, INC.
CHICAGO

Designing valve gear?

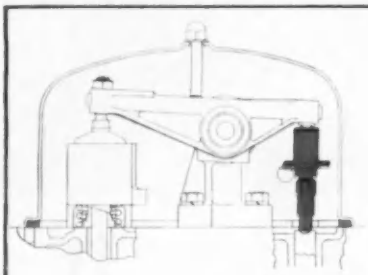
We invite you to use these specialized CHICAGO services



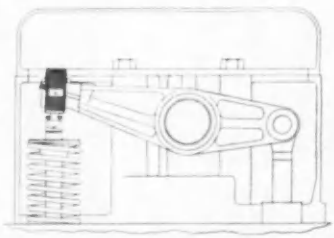
CHICAGO SPRING-LOADED FLAT VALVE HYDRAULIC TAPPET



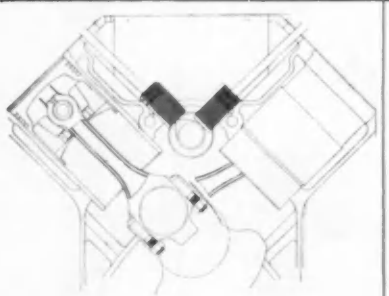
INSERT TYPE ROCKER ARM UNIT



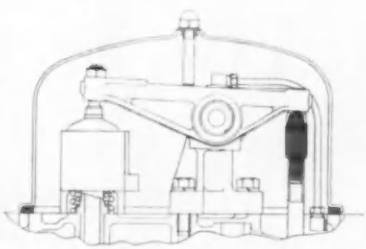
PUSH ROD TYPE FOR COMPRESSION RELEASE APPLICATION



THREADED TYPE ROCKER ARM UNIT



V-8 AUTOMOTIVE HYDRAULIC TAPPET APPLICATION



HYDRAULIC UNIT ON END OF PUSH ROD

Design

of complete valve gear installations for any type of engine . . . passenger car, truck, tractor, diesel, aircraft or industrial.

Development engineering

based on years of specialized experience in valve gear problems. The skills of our engineers will prove a valuable addition to your own engineering staff.

Tappet manufacturing

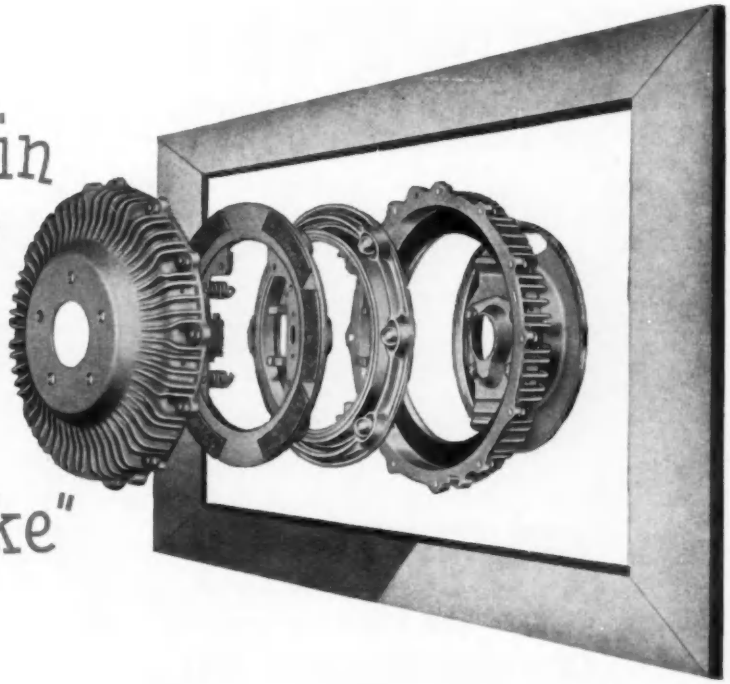
CHICAGO's facilities insure precision-manufacturing, scientific testing and rugged, trouble-free performance in every tappet. We will welcome the opportunity to serve you.

CHICAGO

THE CHICAGO SCREW COMPANY
Division of Standard Screw Company
2801 Washington Blvd., Bellwood, Ill.
Established 1872

Ist das nicht ein safer brake?

"Ja, das ist ein safer brake"

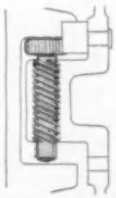




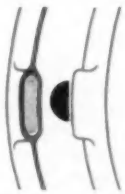
Is this not a housing better?
Yes, this is a housing better.
Aluminum made—
Gets heat away quick—no fade.



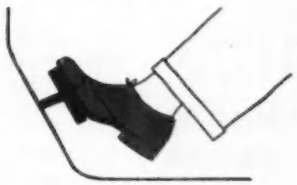
Is this not a lining better?
Yes, this is a lining better.
High deceleration rate, stops straight
Any speed or vehicle weight.



Is this not automatic, too?
Yes, this is automatic, too.
Self-adjusting screw keeps brake true
Safer for you and children, too.



Is this not self-energized?
Yes, this is self-energized.
You start it—momentum parts it
Ball and ramp is stopping champ.



Is this not a pedal predictable?
Yes, this is a pedal predictable.
Secret ensconced in ball and ramp response
To your braking wants.



Is this not a plate so still?
Yes, this is a plate so still.
Torque it takes—with housing mates
For splash-proof brakes.

It is ready, it is safer, it should be adopted now—Auto Specialties' Double-Disc Brake.

AUTO SPECIALTIES MFG. CO., INC.

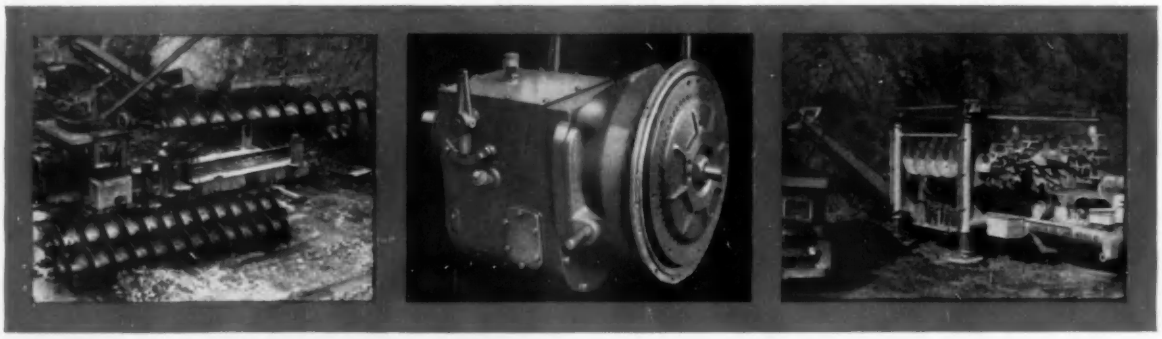
Saint Joseph, Michigan

Plants also at Benton Harbor and Hartford, Michigan and Windsor, Ontario, Canada
Manufacturing for the automotive and farm machinery industries since 1908.

An Assurance of Dependable Service

COTTA
HEAVY-DUTY TRANSMISSIONS

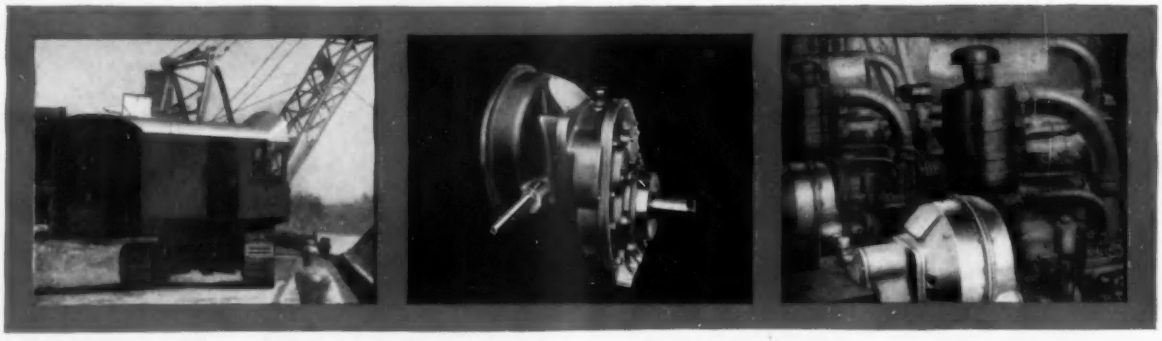
For jobs that ordinary gear-boxes can't handle — heavy-duty loads, continuous day-and-night operation, requiring multi-speeds forward and reverse — come to COTTA for "Engineered-To-Order" Transmissions, custom-designed to fit available space.



An Assurance of Dependable Service

COTTA
HEAVY-DUTY REDUCTION UNITS

Take this low-cost way to adapt higher speeds of new engines to lower rpm required for machine operation. Cotta Reduction Units are available in a broad range of ratios . . . input torque of 150 to 2000 foot pounds — for use on cranes, shovels, pumps, etc.



An Assurance of Dependable Service

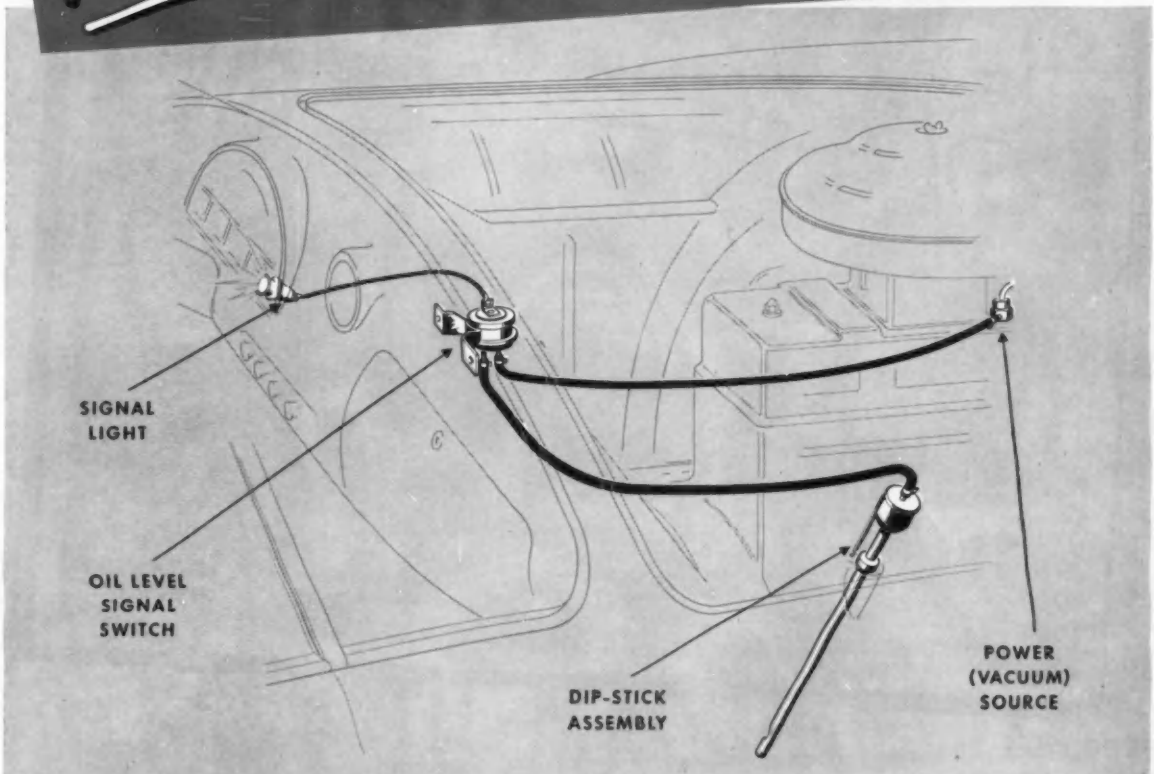
COTTA
TRANSMISSIONS FOR TORQUE CONVERTERS

Get easier control of power through a wide range of torque and speed conditions on mobile equipment with "Engineered-To-Order" Cotta Transmissions. These specially designed, compact transmissions provide increased efficiency on trucks, railcars, winches, drilling rigs, hoists, and other heavy-duty units.



LET US HELP YOU SOLVE YOUR PROBLEM . . . COTTA TRANSMISSION CO., ROCKFORD, ILL.

NEW ELECTRIC DIP-STICK Cautions Driver to Add Oil



KING-SEELEY OIL LEVEL SIGNAL INSTALLATION

The new K-S Oil Level Signal is always a trustworthy advisor. Whenever crankcase oil drops to the "add-oil" level a dash light immediately warns the driver. And, the signal is not affected by oil sloshing on curves, hills or rough roads.

The driver never has to raise the hood to check his oil. Never has to depend on anyone else to tell him when he needs oil. And he never need waste oil by overfilling.

IMPORTANT:—No car design changes are necessary for installation. The K-S Oil Level Signal is equally applicable to all cars.

The added convenience and security you can offer your customers by the use of this device will far outweigh its nominal cost.

KS

KING-SEELEY CORPORATION

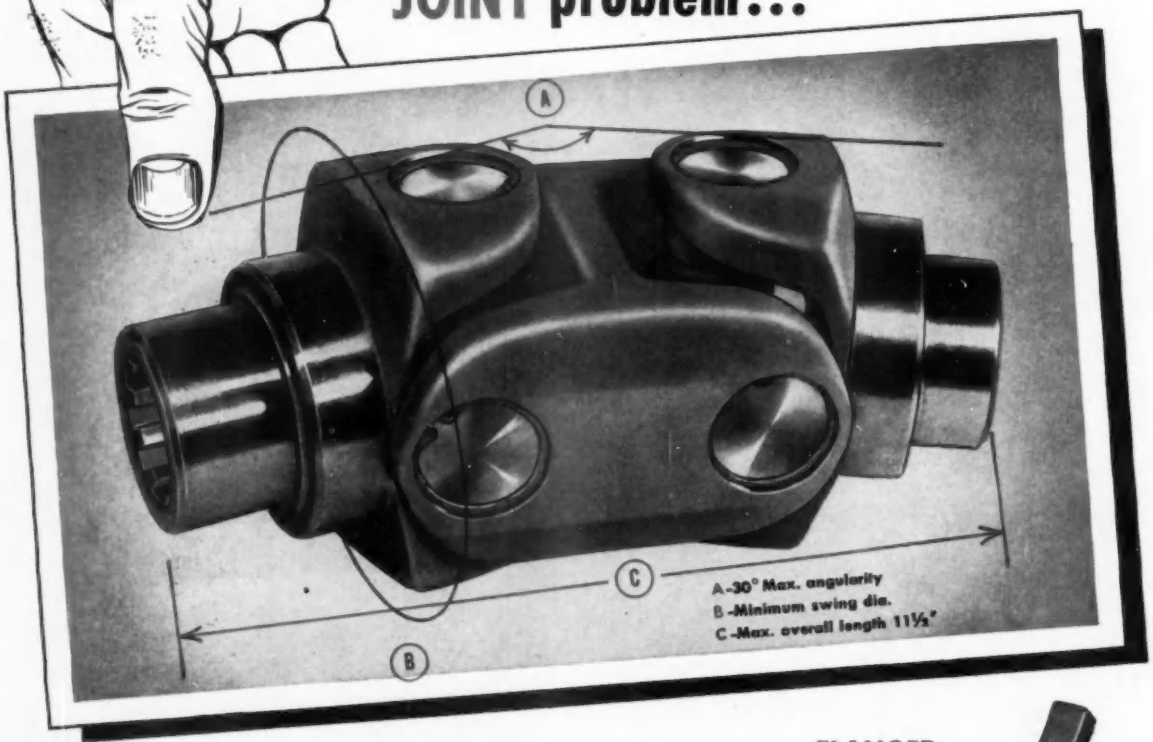
ANN ARBOR, MICHIGAN

CALL KING-SEELEY FOR FULL DETAILS

7399

BLOOD BROTHERS helps solve another UNIVERSAL JOINT problem...

WHAT'S **NEW** AT BLOOD BROTHERS



PROBLEM: A well-known product engineering firm, designing a specialized mobile, diesel-driven machine, required special universal joints to transmit power to rubber-tired all-steering wheels. Joint length and diameter were limited by unusual space restrictions, yet heavy torque loads were expected at angles to 30°.

ACTION: As the designers had worked with Blood Brothers on universals for the unit's conveyor, they sent us experimental joints previously handmade for a larger machine.

SOLUTION: After study of the problem, Blood Brothers' engineers proposed certain alterations, resulting in production and tooling savings.

RESULT: Customer-supplier cooperation helped produce a non-standard joint which successfully meets both cost and operating conditions.

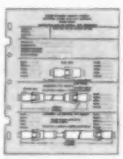
Very likely, your needs can be met with standard components, as Blood Brothers builds more types and sizes of universal joints than any other manufacturer. But standard or special, our engineers are willing and able to cooperate with you. Just write or call.

FLANGED STRAP-YOKE JOINT



In contrast to the heavy-duty joint above, it suggests the wide range of types and sizes offered by Blood Brothers.

For your convenience in specifying requirements, write for copies of this Blank Form "Specification Sheet". They're free!



BLOOD BROTHERS MACHINE DIVISION
ROCKWELL SPRING AND AXLE COMPANY
ALLEGAN, MICHIGAN

UNIVERSAL JOINTS AND DRIVE LINE ASSEMBLIES

another revolutionary development by La Salle

THE NEW fatigue-proof™ STEEL BAR

gives HIGH STRENGTH... WITHOUT HEAT TREATING

"FATIGUE-PROOF" steel bars offer high strength in-the-bar . . *without the expense and trouble of heat treating.* Tensile strength is in the 140,000 to 150,000 p.s.i. range . . hardness, which is related to this strength level, is approximately 30 Rockwell "C."

"FATIGUE-PROOF" has uniform strength across the bar . . and this uniformity is maintained from bar to bar . . lot to lot. This remarkable uniformity of strength makes "FATIGUE-PROOF" ideal for applications in the 140,000 to 150,000 p.s.i. range that formerly required heat treated carbon and alloy steels, either hot rolled or cold drawn.

yet it's EASY TO MACHINE

"FATIGUE-PROOF" machines at least 25% faster than annealed alloys . . 50% to 100% faster than heat treated alloys.

"FATIGUE-PROOF's" excellent machinability permits faster speeds, heavier feeds, better tool life . . your production rates will increase.

Distortion from machining is held to a minimum . . surface finish is greatly improved.

Our Sales Engineers will be happy to show you how you can cut costs and eliminate problems and provide samples for test purposes.

JUST PUBLISHED! Ask for your copy of this new 20-page booklet which gives additional information on the remarkable new "FATIGUE-PROOF."





La Salle STEEL CO.

1438 150th STREET • HAMMOND, INDIANA

Manufacturers of America's Most Complete Line of Quality Cold-Finished Steel Bars

LA SALLE STEEL CO.
1438 150th Street
Hammond, Indiana

Please send me your "FATIGUE-PROOF" Bulletin.

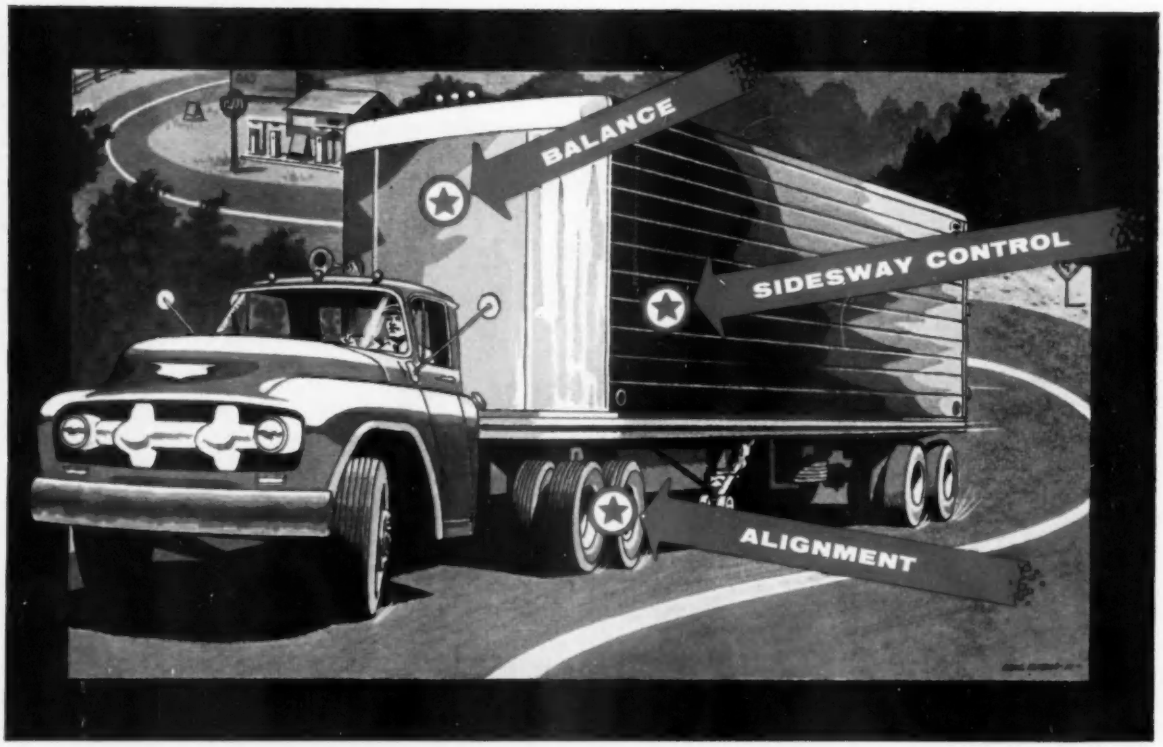
Name_____

Title_____

Company_____

Address_____

City_____ Zone____ State_____



Built-In Features of Leaf Springs

★ Load Balance and Control . . . with the added safety factor provided by integral eye-mountings and multiple alloy-steel leaf components which minimize the possibility of *complete* suspension failure in service.

★ Sidesway Control . . . with the "three-point" suspension distributing strain over a longer segment of frame assembly at both front and rear. This permits a *definite saving* in structural weight of frame.

★ Self-Alignment of springs, frame, and axles achieved by utilizing the design characteristics of leaf springs.

And the PLUS FACTOR of *utmost economy* for both manufacturer and customer.

DSP *Leaf* **SPRINGS**

SINCE 1904 — ORIGINAL EQUIPMENT ON CARS, TRUCKS, CABS, BUSES, TRAILERS

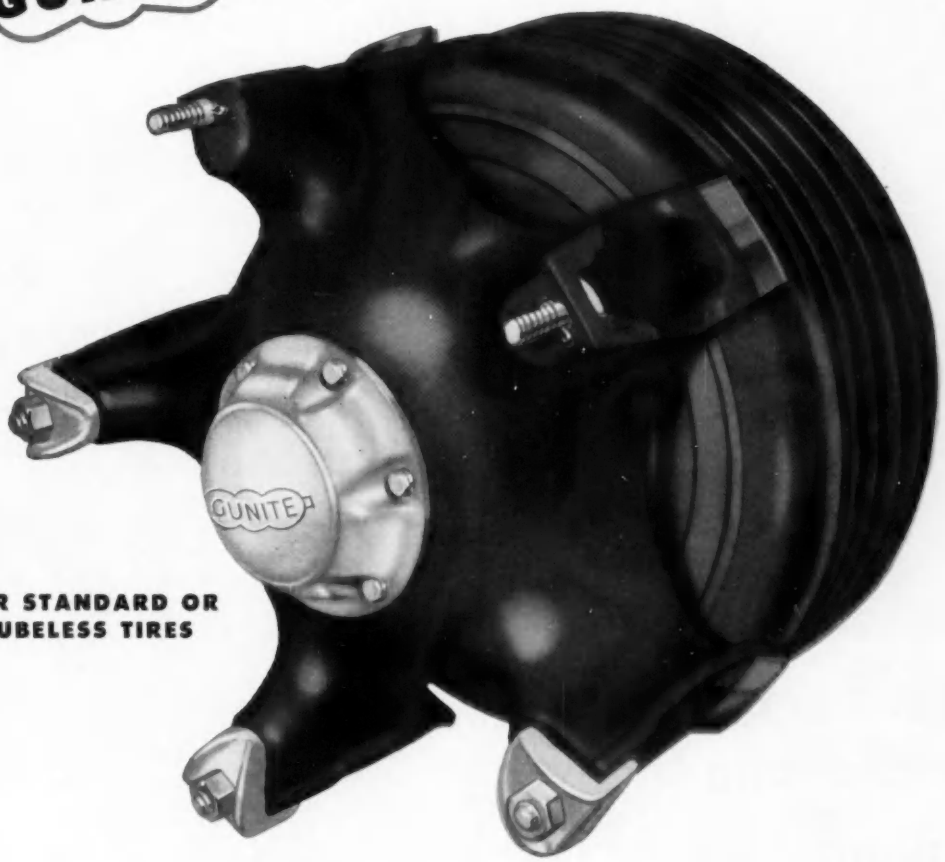
Automotive Division

DETROIT STEEL PRODUCTS COMPANY

Also Makers of Fenestra *Building Products*

2250 E. Grand Blvd., Detroit 11, Michigan

GUNITE STEEL WHEELS
FOR TRUCKS AND TRAILERS

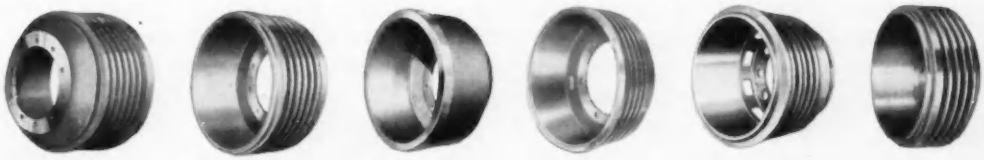


FOR STANDARD OR TUBELESS TIRES

Lightweight...

Economy . . . Strength . . . Gunite Wheels and tubeless tires form the lightest combination at the lowest price. Specify Gunite Wheels on your new equipment.

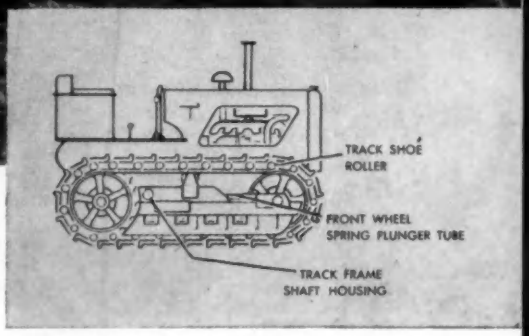
Gunite Brake Drums for Trucks, Trailers and Busses



GUNITE FOUNDRIES CORPORATION • ROCKFORD, ILLINOIS

Established in 1854





For top performance and long service

this rugged Tractor relies on machine parts of

SHELBY SEAMLESS TUBING

In this powerful Oliver OC-12 Bulldozer, the following parts are fabricated from Shelby Seamless Mechanical Tubing — track shoe rollers, front wheel spring plunger tubes, and the track frame shaft housing. The chief qualifications possessed by these parts are high strength and superior wearability . . . qualities that are just right for a heavy-duty tractor application.

Super-rugged equipment calls for super-strong materials. That's why you'll find USS Shelby Seamless Mechanical Tubing being used for so many tractor applications. Its great strength, complete uniformity, and extreme dimensional accuracy make Shelby Seamless the ideal mechanical tubing for the fabrication of machine parts subject to bruising performance and long wear.

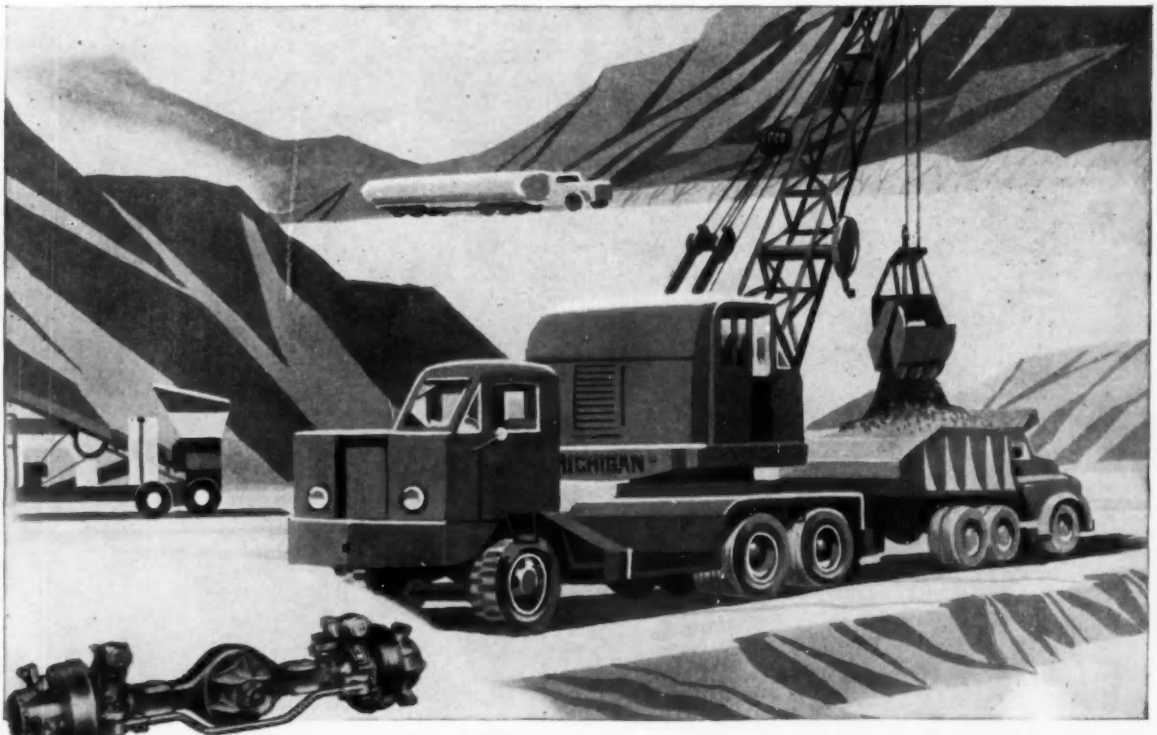
Available in a wide range of diameters, wall thicknesses, various shapes and steel analyses, Shelby Seamless Mechanical Tubing is produced to exacting standards by the world's largest manufacturer of tubular steel products. Contact our engineers for recommendations. They will welcome the opportunity to help you apply Shelby Seamless to your specifications.

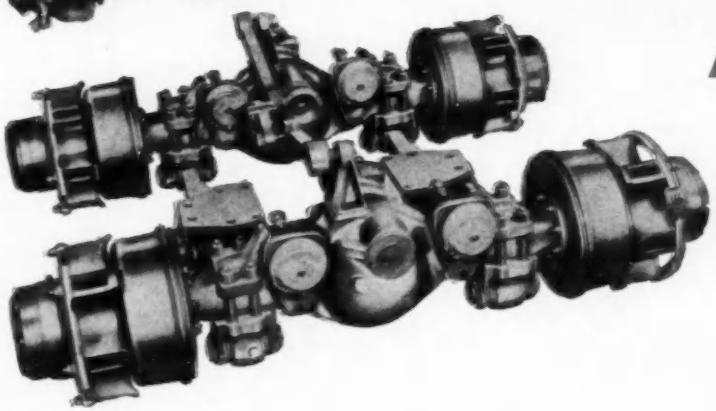
NATIONAL TUBE DIVISION, UNITED STATES STEEL CORPORATION, PITTSBURGH, PA.
(Tubing Specialties)

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS · UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS **SHELBY SEAMLESS MECHANICAL TUBING** WALLS WITHOUT WELDS

UNITED STATES STEEL





A rugged answer to *any* tough 6-WHEEL DRIVE problem

Here's a reliable guarantee of a long, useful, profitable life for a hard-working 6 x 6 vehicle—this husky combination:

- **a Clark steering-drive axle for the front**
- **two Clark non-steer drive axles in tandem at the rear**

These are true heavy-duty units—amply strong to carry tremendous loads, ruggedly built to deliver torque to the wheels with dependable efficiency.

Always, wherever you find it, this is a "Quality Specification" . . . CLARK AXLES.

Are you constantly studying how to increase efficiency and decrease costs in that vital area between fly-wheel and tires? Talk to Clark: for in that "vital area" is where Clark can help you; a fact well known to a number of leading equipment manufacturers—to their profit.

CLARK® EQUIPMENT

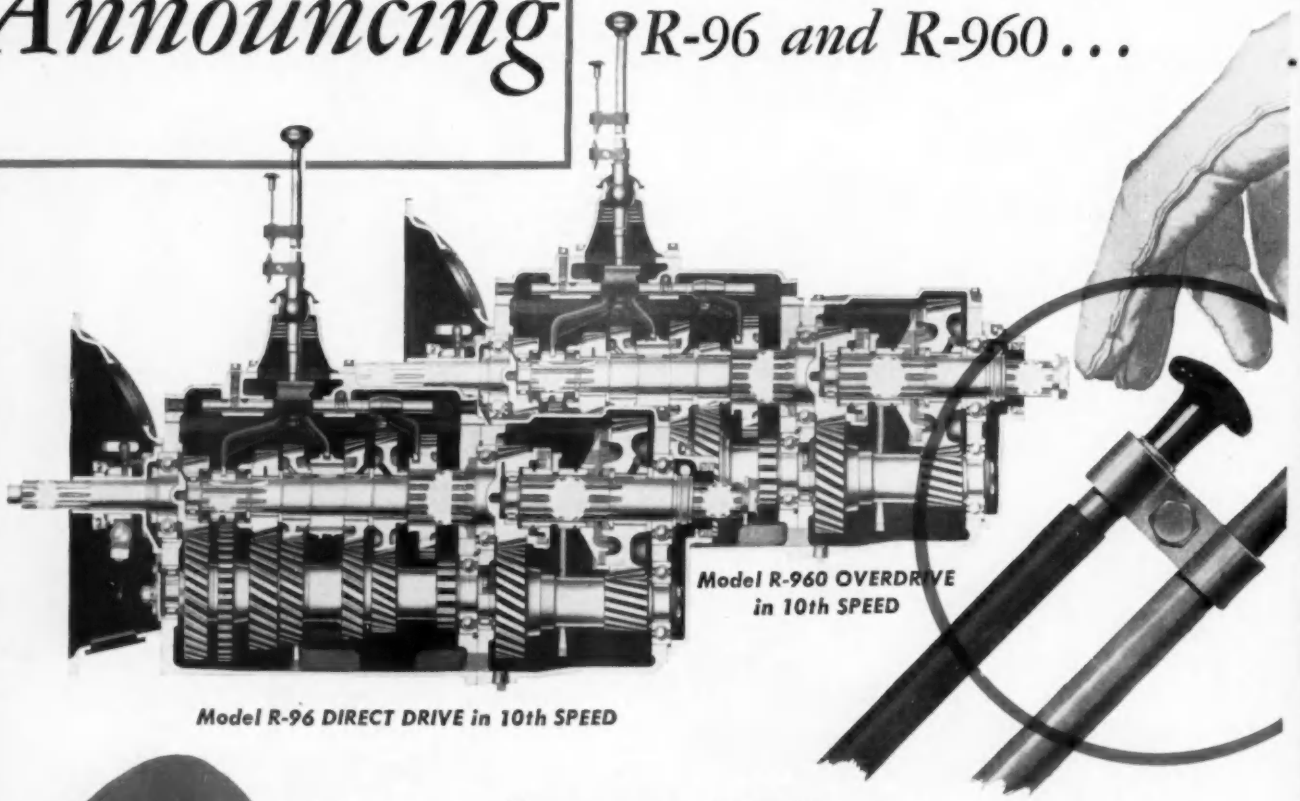


As a practical Step 1, send for the handy, pocket-size Clark Products book—for a clear idea of why it's **"good business to do business with Clark."**

CLARK EQUIPMENT COMPANY, Buchanan, Michigan

OTHER PRODUCTS OF THE CLARK AUTOMOTIVE DIVISION—
TRANSMISSIONS • AXLE HOUSINGS • TRACTOR UNITS • TORCON TORQUE CONVERTERS
ELECTRIC STEEL CASTINGS • GEARS and FORGINGS • FRONT and REAR AXLES for TRUCKS, BUSES and OFF-HIGHWAY EQUIPMENT.

Announcing R-96 and R-960 . . .



Model R-960 OVERDRIVE in 10th SPEED

Model R-96 DIRECT DRIVE in 10th SPEED

2 *New, shorter, lighter . . . Fuller semi-automatic*

Fuller now offers for the first time . . . Models R-96 and R-960 Semi-Automatic ROADRANGER Transmissions with 10 forward and 2 reverse speeds.

With increased performance through exclusive operational features found in *no* other transmission . . . this new 96 series provides all the advantages of the 6 year old 95 series PLUS SHORTER LENGTH AND LIGHTER WEIGHT . . . the new models are 2½" shorter, and weight has been reduced 60 lbs.

No gear splitting . . . there are 10 selective ratios evenly and progressively spaced averaging short 28% steps. Higher road speeds are possible because the engine operates in peak hp range . . . resulting in greater fuel economy.

There's less driver fatigue because there are 1/3 less shifts. Range shifts are pre-selected, automatic and synchronized. More cargo can be carried on the payload axles.

RoadRangers Give Complete Control

Truck drivers have the skill, ability, experience and fast coordination to anticipate ratio requirements from what they see on the road ahead. They can and will provide the right ratios in time, if given the equipment which will permit them to act within those few critical moments before engine rpm and torque drop. But, if they have to wrestle it out with a two-stick main and auxiliary—or sit waiting for automatic actuation—they cannot be blamed for high ton-mile costs.

With the new Semi-Automatic ROADRANGER Transmissions, the driver has complete control of the situation. He can select ratios as required, exactly as his experience tells him is best.

Shifting up, or down, or skip-shifting in either direction, drivers find the new Fuller R-96 and R-960 All-Air Shift ROADRANGERS the most efficient transmissions available . . . the answer to the problem of the right-ratio-at-the-right-time—the answer to the flexibility of operation required





New Movie Available

A new 16 mm. sound and color film: "Semi-Automatic ROADRANGER Transmissions," just released by Fuller, is a dramatic picture story showing actual operating scenes, and how to operate Semi-Automatic ROADRANGER Transmissions. It is being distributed free through truck dealers and distributors.



Instructions—Service

Fuller Manufacturing Company has prepared a 76-page Service Manual containing 232 illustrations covering every detail of operation, lubrication, maintenance and repair of these models. Shifting instructions, condensed on illustrated tags for the R-96 and R-960 Models are supplied for attaching to the shift lever.

GEAR RATIOS

	R-96	% Step	R-960	% Step	
Tenth	1.00		.78		
		27		28	
Ninth	1.27		1.00	27	High
		29			Range
Eighth	1.64		1.27	29	
		28			
Seventh	2.10		1.64	28	
		30			
Sixth	2.73		2.10		
RANGE SHIFT		30		31	
Fifth	3.54		2.76	28	
		27			
Fourth	4.48		3.54	27	Low
		29			Range
Third	5.80		4.48	29	
		28			
Second	7.43		5.80	28	
		30			
First	9.65		7.43		
Low Reverse	11.26		11.26	Low Range	
High Reverse	3.18		3.18	High Range	
Weight					767 lbs.
Oil Capacity					33 pts.

10-speed ROADRANGERS®

to meet every varying condition of traffic, time and terrain.

Two New RoadRangers—Shorter length...weigh less

The 10 speeds are 2½" shorter in length than the older 95 series models, and weight reduction makes the new 96 series 60 pounds lighter. By replacing only 5 parts, the R-96 ROADRANGER can be converted to the overdrive model.

Both new models consist of two sections—a 5-speed transmission with closely spaced ratios, and a 2-speed auxiliary with wider spaced ratios. The combination provides ten forward speeds and two reverse speeds shifted by one lever. The ten forward speeds are secured by using the ratios of the 5-speed section twice . . . the first time with the auxiliary section in low gear; the second time with it in high gear. The two reverse speeds are secured by using reverse in the 5-speed section through either high or low gear of the auxiliary section. The 10 selective ratios of the new ROADRANGERS are evenly and progressively spaced in short 28% steps. Range shifts are pre-selected, automatic and synchronized.

Automatic Air Shift

The auxiliary section is automatically shifted by air after pre-selection of the operating range required. The automatic shift in the auxiliary section after pre-selection is always accompanied by a four-step shift in the 5-speed transmission, either up or down depending upon the direction of the shift in the auxiliary.

Specify the brand new R-96 and R-960 Fuller Semi-Automatic ROADRANGER Transmissions *by name*. Assure *faster* trip time, *lower* fuel consumption, *longer* engine life, *less* driver fatigue . . . *greater profits*. Check with your local truck dealer for the most efficient, easiest-shifting Fuller Transmission models to meet your specific trucking requirements.

Fuller Manufacturing Company
Transmission Division
KALAMAZOO, MICHIGAN

Unit Drop Forge Div., Milwaukee 1, Wis. • Shuler Axle Co., Louisville, Ky. (Subsidiary) • Sales & Service, All Products, West. Dist. Branch, Oakland 6, Cal. and Southwest Dist. Office, Tulsa 3, Okla.

Plus Performance

for temperature control of engines with pressurized cooling systems: for today's and tomorrow's cars and trucks



DOLE

"DV" Thermostats

DOLE DV THERMOSTATS used in leading makes—have proved their dependability and capacity to operate positively against the higher pump pressures in modern sealed cooling systems.

DOLE DV THERMOSTATS are also more efficient for the modern cars with open cooling systems.

In a word, DOLE DV THERMOSTATS help *all* cars of advanced design to give top performance—quick warm-up, savings of gasoline, oil and motor wear. Plus, of course, quick heat from the car heater.

Dole Thermostats are available in various sizes and models to meet all installation requirements.


DOLE DV 1


DOLE DV 2


DOLE DV 3



CONTROL WITH DOLE

THE DOLE VALVE COMPANY • 1901 Carroll Avenue, Chicago 12, Illinois • Detroit • Los Angeles • Philadelphia

(Advertisement)

MORE EFFICIENT DESIGN, IMPORTANT SAVINGS, SIMPLIFIED ASSEMBLY, BETTER APPEARANCE

These are some of the many benefits reported by Design Engineers who have adopted TRU-LAY PUSH-PULLS for remote control operations on literally hundreds of products

Here are typical comments recently received from equipment manufacturers whose machines or implements are equipped with these accurate and dependable remote controls:

Saves Time, Labor and Material
"The use of your flexible Push-Pulls saves us a great deal of time, labor and material. The old linkages frequently required much planning in both engineering and shop which is not required now. On some of our equipment we use Push-Pulls from 10 to 30 feet in length. They operate clutch controls on the Main Power Unit, Feed Conveyors and Delivery Conveyors."

Greater Flexibility of Design
"The principal advantage of Tru-Lay Push-Pulls in our application is that they permit flexibility in locating the control valve in relation to the operator's position."

Cost Less to Install
"Tru-Lay Push-Pulls are easier and less expensive to install than linkages for remote control of power take-off, brake and clutch. Better appearance, too."

Simple and Neat
"For several models of farm tractors, we selected your controls for their simplicity and neatness of application as governor controls."

Solution to Tough Problem
"Can be installed where straight rods are impossible . . . for Remote Control of transmissions, brakes and clutches."

Eliminates Maintenance
"Simple operation and elimination of maintenance problem are the major advantages in using your Push-Pulls."

Reduces Number of Parts
"Your Push-Pulls have eliminated links, radius rods and other lost-motion devices for remote control of hydraulic valves."

Provide ACCURATE Control
"Tru-Lay Push-Pull control cables provide minimum back-lash, even in installations up to 30 feet in length, because the cable is designed to close tolerances with minimum drag and lost motion."

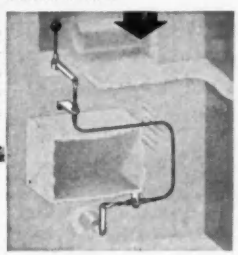
• • •

TRU-LAY PUSH-PULLS are "Solid as a rod but *Flexible* as a wire rope." This flexibility makes it possible to snake around obstructions . . . permits the ideal arrangement of all elements of remote controls.

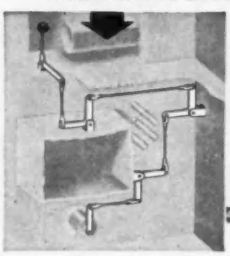
Advantages *of Tru-Lay Push-Pull flexibility and simplicity are pictured below—*

TRU-LAY PUSH-PULL

Simple
One Moving Part
Life-Time Service
Life-Time Accuracy
Low over-all Cost
Noiseless



MECHANICAL LINKAGES



Complex
Many Parts
Many Points of Wear
Increasing Back-Lash
Loss of Accuracy
Vibration
Rattles

Construction Equipment and **Farm Implements** provide good examples of the wide-spread use of these accurate, simple and dependable Push-Pulls. On Power Shovels, Winches, Graders, Road Oilers, Dump Trucks, Snow Plows, Engine-driven Pumps, Crushers, Tractors, Combines, Corn Pickers, Corn Row Sprayers, Corn Detasslers, Orchard Sprayers, Power-driven Tree Trimmers, Tobacco Picking Machines and others . . .

TRU-LAY PUSH-PULLS are operating unfailingly for the remote control of Hydraulic and Air Valves, Brakes, Clutches, Transmissions, Throttles, Chokes, Governors, Power Take-Offs, Spray Nozzles, Vent Directional Fins and on many other applications.



ACCO *Our DATA FILE will answer all further questions*

AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

TRADE MARK

601-H Stephenson Bldg., Detroit 2
2216-H South Garfield Ave., Los Angeles 22 • 929-H Connecticut Ave., Bridgeport 2, Conn.

There is No Worry about Failures or Maintenance Costs with TRU-LAY Push-Pull Remote Controls

Long Life is a matter of record. We have never heard of a Tru-Lay Flexible Push-Pull Control wearing out in normal service. Failures, that sometimes harass users of more complex controls, are eliminated by the use of these simple, positive-action controls.

Dependable Operation of these controls is a certainty, even under the most adverse conditions . . . HOT as jet engines (note: Tru-Lay Push-Pulls are actually performing on hot jet applications) . . . COLD to 70° F below zero . . . SOAKIN' WET . . . ABRASIVE . . . or just plain TOUGH.

Freedom from Trouble is assured because of such features as . . . full protection of the inner, working member by the tough flexible conduit . . . lubrication of the inner, working member *for life* during assembly . . . seals that keep moisture, dust and other foreign matter out of the unit . . . cold swaging of fittings that makes them integral parts of the control unit.

Accuracy is inherent in the basic design of Tru-Lay Push-Pulls. They are precision products, not gadgets.

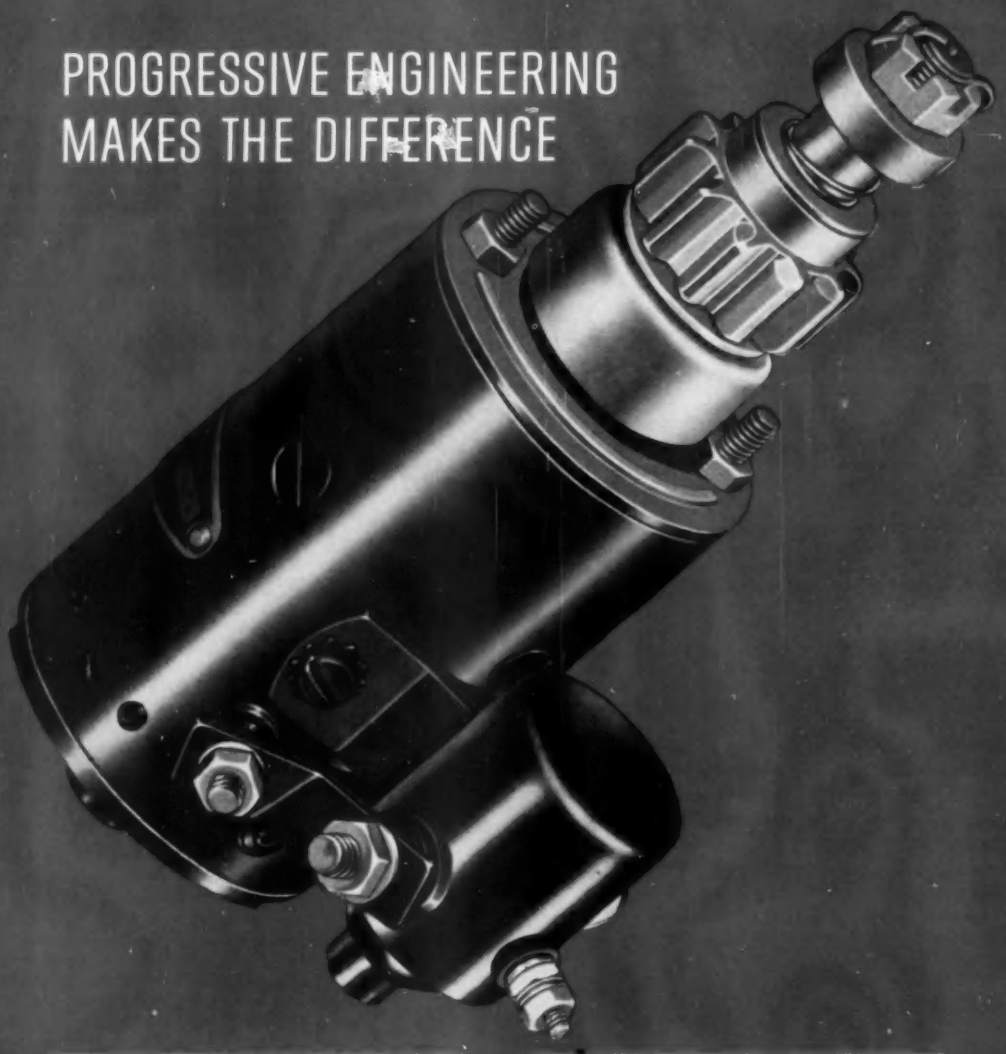
Capacity ranges from light jobs up to jobs of 1,000 lbs. input. These Push-Pulls will handle jobs 150 feet or more from the control point.

"Solid as a rod, Flexible as a wire rope" aptly describes Tru-Lay Push-Pull Controls. This flexibility provides positive, remote action whether anchorages are fixed or movable . . . it damps out noise and vibration . . . it greatly simplifies installation of controls by reducing the number of working parts and by making it possible to snake around obstructions.

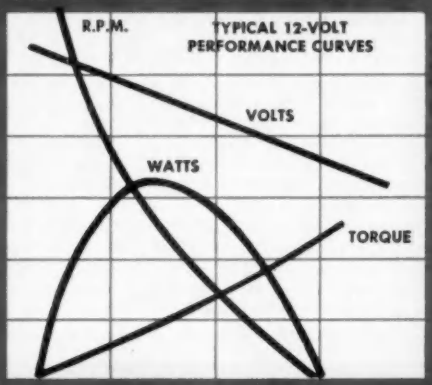
Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread application of Tru-Lay Push-Pulls. Standard anchorages, fittings and heads have been designed that meet requirements on approximately 80% of the installations. Simple modifications of these standards, or minor changes in your own design, cover almost every special situation. Our engineers have the know-how on such matters, and will work with you.

For Further Information—The DATA FILE pictured at the left contains six booklets and bulletins that will answer any further questions you may have about this versatile and dependable tool. It is quite likely that this material will point the way to a simplified solution of your remote control design problems. Write for a copy.

PROGRESSIVE ENGINEERING MAKES THE DIFFERENCE



TYPICAL SPECIFICATIONS	MODEL 1113501	MODEL 1113551
VOLTS	6	12
FRAME DIAMETER (INCHES)	3	3
FRAME LENGTH (INCHES)	4.30	4.42
MOUNTED LENGTH (INCHES)	5.25	5.37
APPROXIMATE WEIGHT (POUNDS)	6.5	6.5



DELCO-REMY DEVELOPS A NEW LINE OF CRANKING MOTORS FOR OUTBOARDS AND OTHER APPLICATIONS

A new series of Delco-Remy cranking motors, with many new design features, is now available for outboards, garden tractors, power mowers and other similar applications.

With a frame diameter of only 3 inches, an overall length of slightly over 5 inches when mounted, and a weight of about 6½ pounds, the powerful new motors will crank one-cylinder engines up to 15 H.P., two-cylinder engines up to 35 H.P., and four-cylinder engines of even higher horsepower.

These four-pole, four-field motors, designed for both 6-volt and 12-volt systems, may be powered by standard Delco batteries.

Available now for original equipment applications, the new motors can be supplied with or without automatic drives and solenoid switches to meet varying requirements. They are yet another example of Delco-Remy leadership in electrical equipment "Wherever Wheels Turn or Propellers Spin." Manufacturers of engines and power equipment are invited to write directly to Delco-Remy for complete information and engineering assistance on the application of these units.

DELCO-REMY • DIVISION OF GENERAL MOTORS • ANDERSON, INDIANA

GM GENERAL MOTORS

GENERAL MOTORS LEADS THE WAY STARTING WITH

Delco-Remy

ELECTRICAL SYSTEMS

READY NOW!

These 4 Brand New Patterns for your 1957 Products



These brand new RIGID-tex patterns will put sparkling beauty plus functional mar-resistance into your products to give them greater profit building sales appeal. RIGID-tex Metal is available in stainless steel, aluminum, titanium . . . in fact all metals, all finishes and colors.

RIGID-tex is a three-dimensional metal that is stronger than flat rolled metal. It adds strength and rigidity without increasing weight. Its textured surface hides scratches, smudges and even dents, maintaining indefinitely the appearance of newness that adds so much to the enjoyment and satisfaction of any product.

Let RIGID-tex help make yours a best-seller.

• *See Sweet's Design File 1a/Ri or write us for information.*

IT'S RIGIDIZED®

RIGIDIZED METALS CORPORATION 6713 Ohio St., Buffalo 3, N.Y.

SALES REPRESENTATIVES IN PRINCIPAL CITIES

for heavy radial loads...

or combined radial-thrust loads from either direction—even at extreme high speeds



BCA

ENGINEERS: Send for a copy of BCA's valuable 100-page "Engineering Handbook." Write on your company letterhead. It's free!

single row, deep groove radial bearings

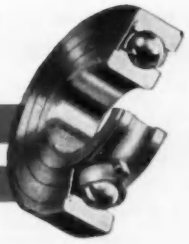
Precision-designed to sustain heavy radial loads or combined radial-thrust loads, these versatile BCA Conrad type ball bearings are built to the highest standards of material and workmanship.

Large size balls give the optimum ratio of ball diameter to bearing race section at the heaviest stressed points. Deep grooved, "high shouldered" raceways permit the bearing to carry heavy thrust loads in either direction equal to 100% of the radial load rating—even at extreme speeds.

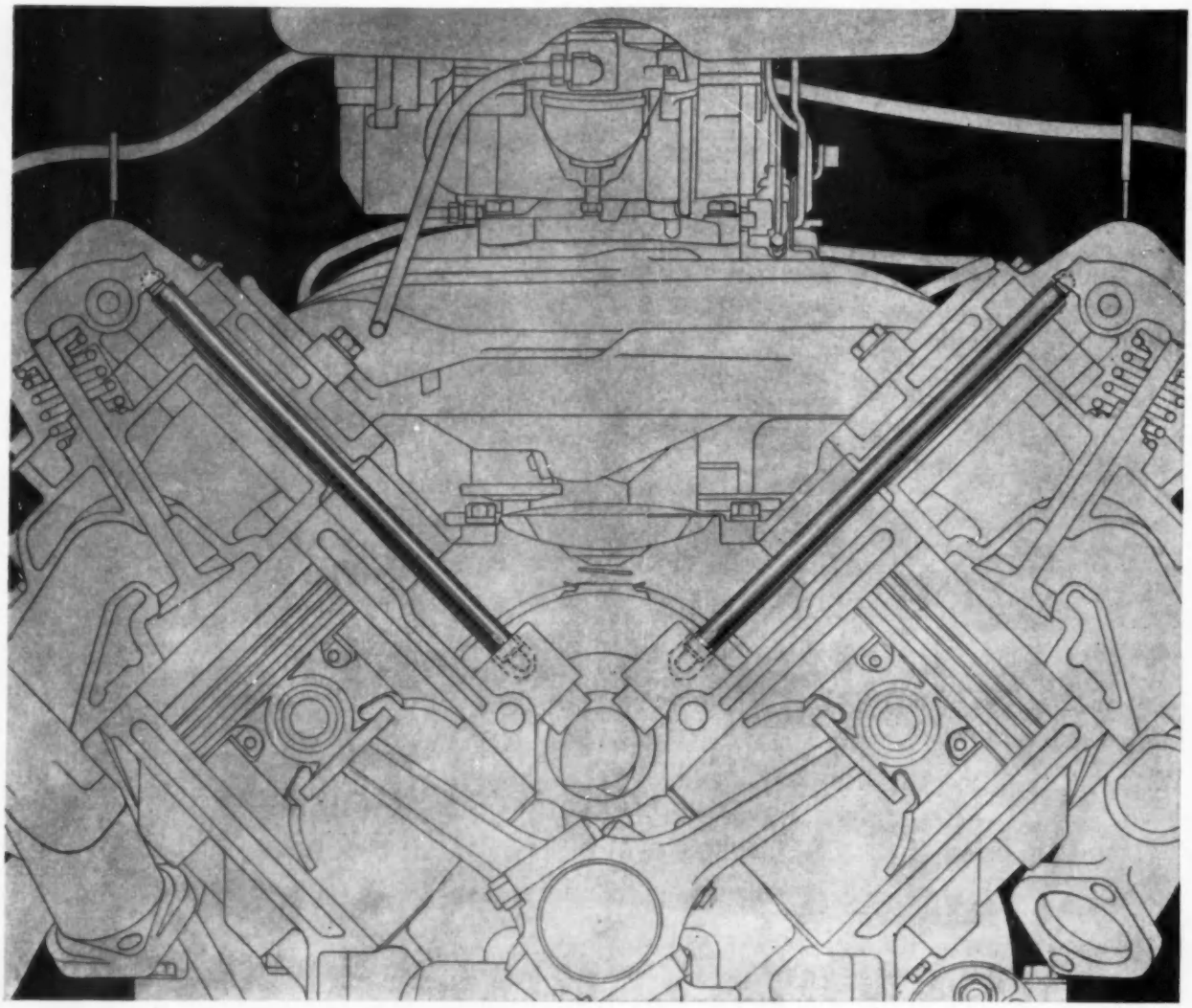
When the job calls for *more* than just another bearing, specify the name you can count on . . . BCA. The name is your guarantee.

BCA

BEARINGS COMPANY OF AMERICA
DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.
LANCASTER • PENNSYLVANIA



Bundy Tubing push rods help Packard.



Lightweight push rods of Bundy Tubing, long proved in automobile and truck engines, help improve performance of powerful new Packard V-8 engines, made by Packard-Clipper Division of the Studebaker-Packard Corporation. These tough push rods reduce cam load, increase efficient function of the entire valve train.

WHY BUNDYWELD IS BETTER TUBING



Bundyweld starts as a single strip of copper-coated steel. Then it's . . .



continuously rolled twice around laterally into a tube of uniform thickness, and



passed through a furnace. Copper coating fuses with steel. Result . . .



Bundyweld, double-walled and brazed through 360° of wall contact.



← **NOTE** the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

. produce more powerful engine

Automotive engineers have known for years that they can rely on tough, leakproof Bundyweld Tubing for vital tubing parts in both cars and trucks. That's why you'll find extra-sturdy Bundyweld being used for countless important applications, like the push rods shown here.

In fact, Bundyweld has proved itself so dependable that it has racked up this almost incredible record: *Bundyweld is used in 95% of today's cars, in an average of 20 applications each.*

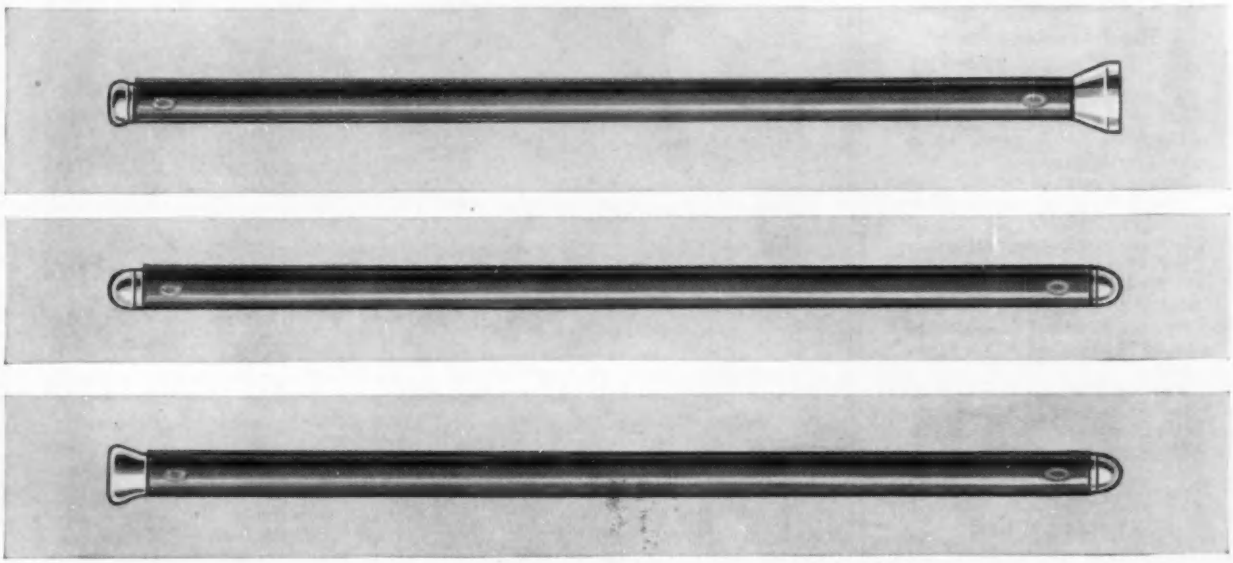
Here's why you, too, may profit by relying on Bundyweld for your important automotive, truck, or farm equipment applications . . . .

The tubing itself: Bundyweld is the only tubing double-walled from a single metal strip, with exclusive Bundy-developed beveled edges. It's SAE 1010 steel, copper-bonded through 360° of double-walled contact into a strong, lightweight, beadless tubing. Wall thickness and concentricity are accurate, uniform. Ultimate yield strength, tensile strength, and fatigue limit are exceptionally high.

Bundy's plus-services: Bundy backs up its unparalleled tubing with a staff of engineering experts who take pride in solving customers' tricky tubing problems; with unexcelled fabrication services; with custom-packaging of orders, *on-schedule* deliveries.

For more information, or for help with your special tubing problems, call, write, or wire us.

BUNDY TUBING COMPANY • DETROIT 14, MICH.



Bundy Tubing fabricates more easily than the material it replaces; results in more uniform, better finished parts. Push rods above were fabricated by Chicago Screw Company, Bellwood, Ill.

BUNDYWELD TUBING®

DOUBLE-WALLED FROM A SINGLE STRIP

Bundy Tubing Distributors and Representatives: ***Cambridge 42, Mass.:*** Austin-Hastings Co., Inc., 226 Binney St. • ***Chattanooga 2, Tenn.:*** Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg. • ***Chicago 32, Ill.:*** Lapham-Hickey Co., 3333 W. 47th Place • ***Elizabeth, New Jersey:*** A. B. Murray Co., Inc., Post Office Box 476 • ***Los Angeles 58, Calif.:*** Tubesales, 5400 Alcoa Ave. • ***Philadelphia 3, Penn.:*** Rutan & Co., 1717 Sansom St. • ***San Francisco 10, Calif.:*** Pacific Metals Co., Ltd., 3100 19th St. • ***Seattle 4, Wash.:*** Eagle Metals Co., 4755 First Ave., South ***Toronto 5, Ontario, Canada:*** Alloy Metal Sales, Ltd., 181 Fleet St., E. • **Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.**

(Advertisement)

R B&W FASTENER BRIEFS

RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY



Technical-ities

By John S. Davey

The important facts about nuts

A nut's purpose is to load the bolt in tension for a tight joint. For this, it is given shear strength greater than the breaking point of the bolt; and sufficient bearing area to avoid crushing or flow of the bearing surface with consequent reduction of tension.

While the thread form of a nut is accurate, its "lead" cannot, for practical purposes, be made identical with that of the bolt. Thus, a nut is made from material plastic enough to allow the threads to deform upon tightening and thereby adjust to distribute the load over many threads rather than concentrate it on the first few.

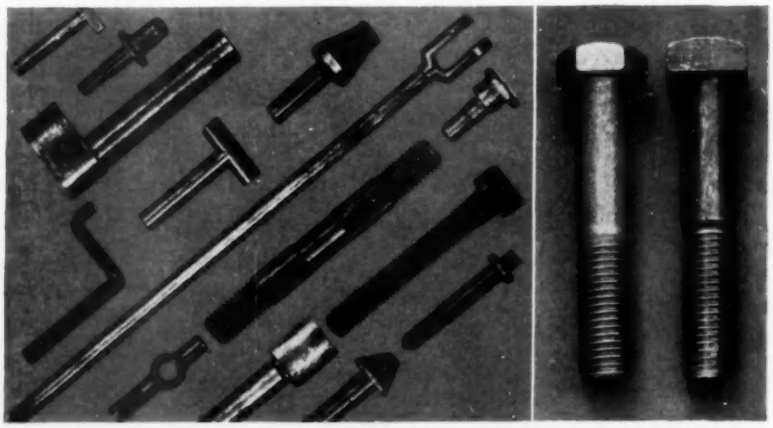
WHAT TO USE

The standard "Finished" nut series satisfies the requirements. It gives not only the required bearing area, but also enough section for proper strength and to minimize the spreading or dilation of a nut when loaded. (The standard "Heavy" nut series is called for only when bolt holes have large clearances, or for high bolt loads.)

As a good general guide to follow, use nuts that are:

1. Made to Am. Std. dimensions;
2. Made from soft, ductile material;
3. Strong enough to break the bolt or screw with which it is used. This would determine whether "Finished" or "Heavy" series is selected.

Cold heading produces strong, low cost parts



Representative range of mechanical parts produced by RB&W by cold heading . . . the same process used to produce the high quality, economical RB&W standard bolts and cap screws shown at right.

Here's a product-improving fact often overlooked: The same forming operation that produces large volumes of strong fasteners at surprisingly low cost can also be used for headed, special mechanical parts.

Cold heading upsets metal along its own axis. Flow lines are continuous, without folds, giving greater head strength against shear, fatigue and impact. Moreover, the material has better quality to start with, since unsound metal would distort or open in the operation and be rejected automatically. Uniformity is assured. Finish is also better.

Designers and production men get all these physical advantages when using RB&W standard bolts and cap screws. They can also have them in special parts at low cost when the need is of sufficient volume to justify machine set-up time. For more information and help on your specific needs, write Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y.

Plants at: Port Chester, N.Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional offices at: Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco.

30% faster assembly— and joints stay tight

When famous-make chain saws were fastened with regular screws plus washers, they loosened on the job. Then SPIN-LOCK screws were used. These not only held tight, they also speeded assembly time 30%. What's more, they cost no more than former screw plus lock washer.

SPIN-LOCK screws have self-anchors in the form of hardened, tiny teeth which dig in and hold under severe service. Various types, sizes and heads available. Send for data or see Sweet's Product Design File.

EASY WAY TO PUT OUTPUT ON THE UPSWING!

shift lubrication methods from

Backward to Forward!





ALEMITE AIR-OPERATED TRANSFER PUMP

gives 63% faster lubricant transfer

...saves right down the line!

The *real cost* of plant lubrication is not just the *lubricant* alone! Actually, it's the time and labor needed to get the lubricant *out* of the original drum—*into* a bucket pump or powergun—and then *applying it* to machine bearings. That's where the real costs add up!

And that's why an Alemite Air-Operated Transfer Pump can cut costs in your plant—especially if you are using old-fashioned hand methods of lubrication. It transfers 37 pounds of pressure gun grease *per minute*—direct from the original drum—completely sealing the lubricant at all times—protecting against mess, waste and contamination.

It's fast—and versatile! It can even handle alcohol, cutting oils, kerosene—almost any non-corrosive non-abrasive fluid you use by the drum. Delivers light fluids at a rate of up to 15 gallons per minute!

There's no better way to speed up your handling of lubricants—because an Alemite Transfer Pump pays for itself by saving man-hours and machine-hours as well!



• A 400-pound barrel of lubricant arrives at the plant—sealed, fresh, "refinery clean."



• An Alemite Transfer Pump is inserted in the bung-hole. It is threaded to fit—completely reseals the barrel.



• In less than a minute a 25-pound bucket pump is filled! No contamination, no air pockets, no mess or waste!



• Now the bucket pump is ready to service hundreds of hungry bearings with lubricant that is protected all the way from barrel to bearing!



***FREE!* New Booklet:**
"5 Plans for Better Lubrication"
Alemite, Dept. KK-36, 1850 Diversey Pkwy. Chicago 14, Illinois
Please send me my FREE copy of "5 Plans for Better Lubrication."

Name .....
Company .....
Address .....
City ..... **Zone** ..... **State** .....

ALEMITE

Ask anyone in industry

A PRODUCT OF SW STEWART WARNER



Birthstone

. . . Steel Cutting Carbide from the Laboratories of Ramet



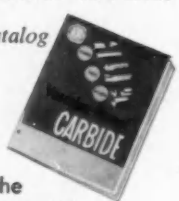
1930 — In this year the stage for automation was set by the development of tantalum-carbide in the laboratories of Ramet Corporation of America, now Vascoloy-Ramet Corporation.

Here was the first successful steel-cutting grade of carbide. Here was a cutting edge for which machine tools were yet to be developed. Here was the birthstone for today's mass production, for cutting speeds and tool life previously impossible.

TODAY — Vascoloy-Ramet research and development has speeded the progress of cemented carbide tools. Improved manufacturing, design, application and quality control plus new carbide grades, new tools and new toolholders offer the carbide user constantly growing opportunity for speeding production and lowering costs. Applications not feasible yesterday are in successful, profitable use today Ask your V-R man to help you apply carbides more fully.

TOMORROW — The carbide frontiers of today are being crossed one by one through continuous development and application engineering. The carbide industry has learned never to say "it can't be done". Your V-R man can help you develop carbide applications to reduce costs on jobs now being done with less efficient tooling. Talk it over with him.

Write for V-R Carbide Catalog for complete information on V-R carbide products.



VISIT V-R
In Booth 1137
at the 1956 ASTE
Industrial Exposition,
International
Amphitheater,
Chicago, March 19-23



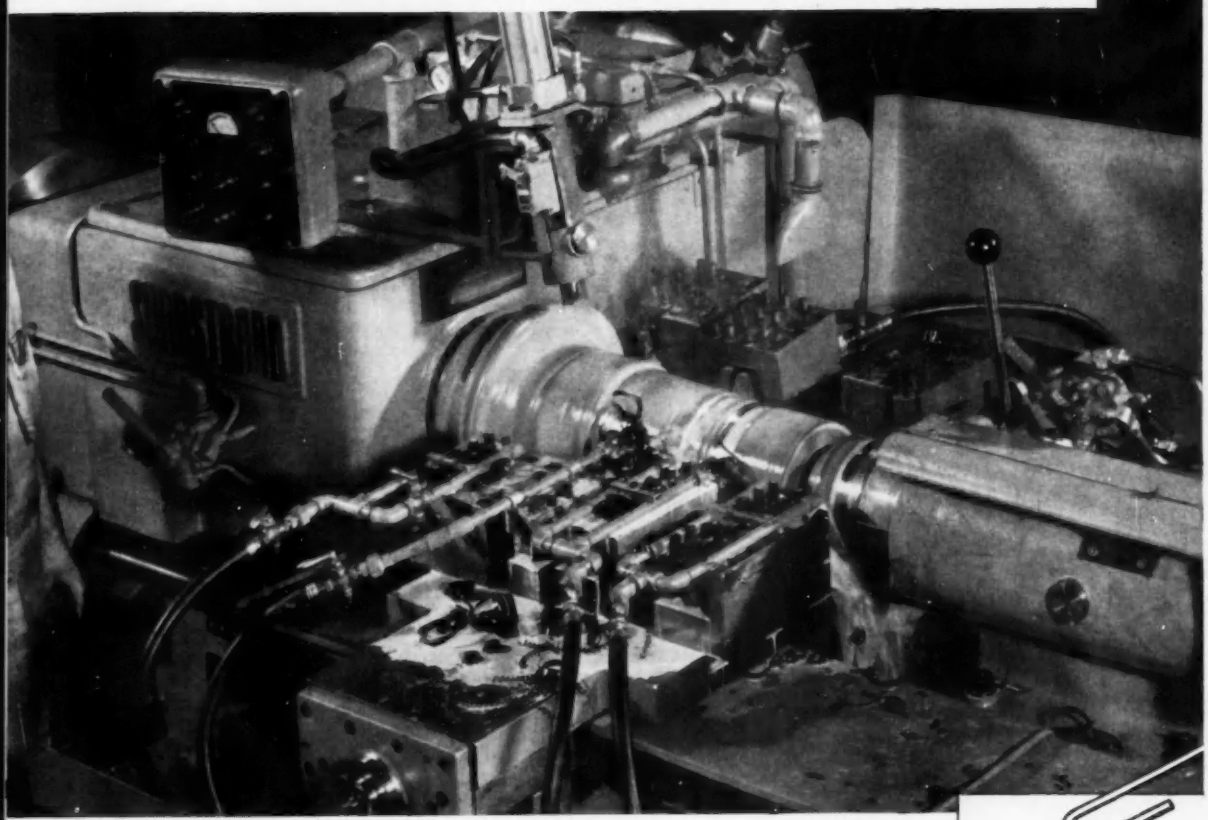


Get the
Cost-Cutting Edges
from the V-R Man!
Call your local V-R distributor or representative.

Pioneers in Cemented Carbides • Tools Blanks • Toolholders • Inserts • Dies

V-R and TANTUNG are registered trademarks of Vascoloy-Ramet Corporation

of Automation



How V-R Cutting Edges Can Cut Your Costs

$800 Yearly Saving on One Machine . . .

A major electrical equipment manufacturer reports this impressive saving on turning steel shafts for electric motors since replacing previous carbide tools with V-R Carbide.

75% More Output Per Grind . . .

In boring the I.D on a cast steel transmission housing, a leading automobile manufacturer reports 700 pieces per grind with V-R Carbide compared to 400 pieces with previous carbide.

Output Increased Six Times . . .

Rough turning, semi-finishing and cutting off to length of Inconel X bolts was increased from 5 pieces per day to 30 at a well known aircraft plant when V-R Carbides replaced another type.

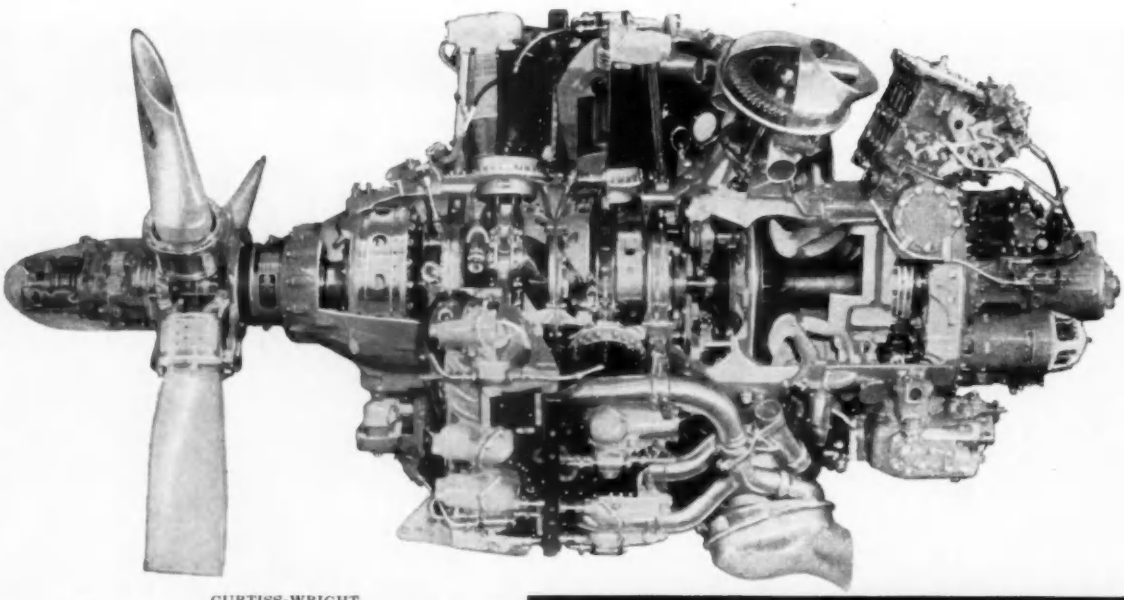
. . . and, **TANTUNG TOOLS,** made of V-R's *exclusive* cast alloy with high red-hardness, low friction coefficient and extra high strength. Get the facts about these tools that bridge the gap between high speed steel and cemented carbides. Ask for CATALOG.

MANUFACTURERS OF—CARBIDES . . . TANTUNG . . . INVESTMENT CASTINGS . . . MINING TOOLS

Vascoloy-Ramet Corporation

SUBSIDIARY OF FANSTEEL METALLURGICAL CORPORATION

818 S. Market St., Waukegan, Illinois

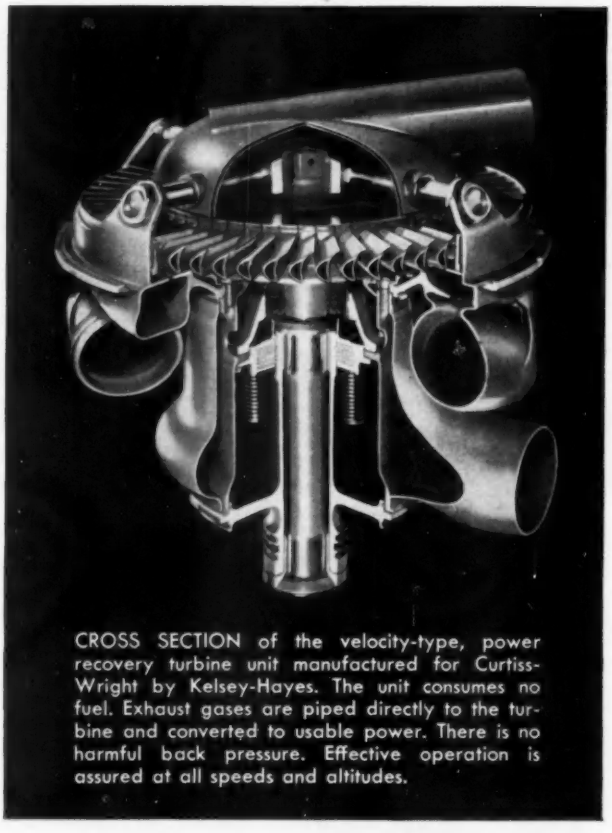


CURTISS-WRIGHT
Turbo Compound Engines are in use by 30 World Airlines plus leading military aircraft

Kelsey-Hayes helps put 20% power bonus into Curtiss-Wright engines

One more example of Kelsey-Hayes diversity at work for major industries throughout America

Any way you translate it—*20% longer range, 20% less fuel, 20% more payload*—power recovery turbines on the Curtiss-Wright Turbo Compound engine mean greater operating economy. The entire power recovery unit—requiring 2000 close tolerance machining operations—is manufactured to highest engineering standards by the Aviation Division of Kelsey-Hayes.



CROSS SECTION of the velocity-type, power recovery turbine unit manufactured for Curtiss-Wright by Kelsey-Hayes. The unit consumes no fuel. Exhaust gases are piped directly to the turbine and converted to usable power. There is no harmful back pressure. Effective operation is assured at all speeds and altitudes.

KELSEY-HAYES

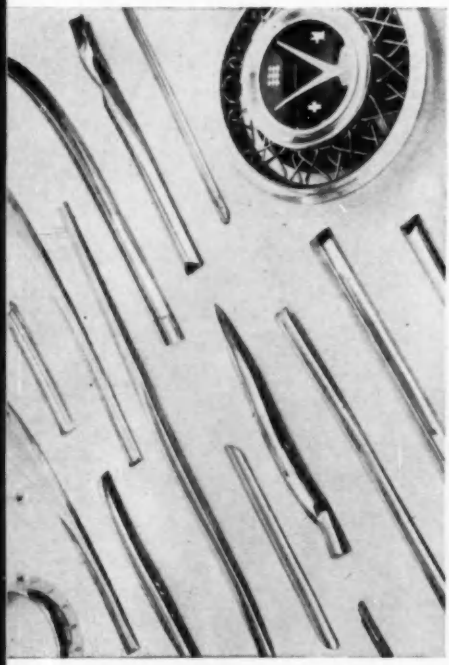
Kelsey-Hayes Wheel Co., Detroit 32, Mich. • Major Supplier to the Automotive, Aviation and Agricultural Industries

TEN PLANTS / Detroit and Jackson, Michigan; McKeesport, Pa.; Los Angeles, Calif.; Windsor, Ontario, Canada • Davenport, Iowa (French & Hecht Farm Implement and Wheel Division) • Springfield, Ohio (SPECO Aviation, Electronics and Machine Tool Division)



He'll appreciate trim with

beauty that's more than skin deep



JUNIOR HAS A DRIVER'S LICENSE. And a checkbook backed by his spare-time earnings. Soon now all three will be at the used car dealer's.

The car that will get Junior's attention will be a car that has kept its good looks. It will have bright, sparkling trim—and that means Stainless Steel.

All car buyers like Stainless Steel trim, because its lasting good looks mean a better allowance at trade-in time. And keeping Stainless Steel trim looking well at all times is a relatively simple task free from laborious rubbing and polishing.

Stainless trim looks better longer because it's not just a surface beauty, but a beauty that can't be polished off. Car buyers know this — they've had other happy experiences with Stainless — and that makes the dealer's selling job easier.

When you give your customers trim with "beauty that's more than skin deep," make it from USS Stainless Steel. This service-tested cold-rolled strip is available in a complete range of grades and finishes to meet your fabricating requirements.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

SHEETS · STRIP · PLATES
BARS · BILLETS

USS

PIPE · TUBES · WIRE
SPECIAL SECTIONS

5-40

UNITED STATES STEEL

Quantity
PRODUCTION
of
GREY IRON CASTINGS

*

ONE OF THE NATION'S
LARGEST AND MOST MODERN
PRODUCTION FOUNDRIES

*

ESTABLISHED 1866

THE WHELAND COMPANY

FOUNDRY DIVISION

MAIN OFFICE AND MANUFACTURING PLANTS

CHATTANOOGA 2, TENNESSEE

H & K Perforated Materials

mean

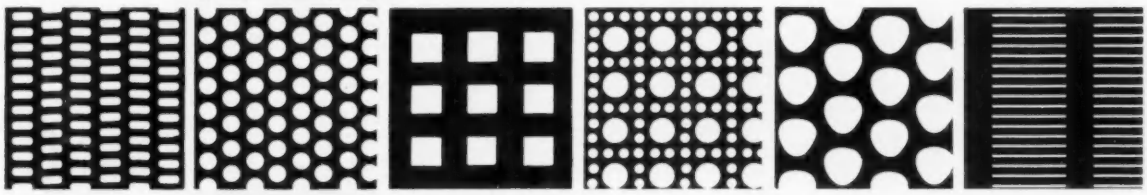
UTILITY · BEAUTY · ECONOMY

for

Designers, Stylists, Buyers

Round Holes . . . . .

Square Holes . . . . .



Slots . . . . .

Oblong Holes . . . . .

Triangles . .

Decorative Designs . . .

In Thousands of Patterns . . .

A *MEDIUM* OF LIMITLESS APPLICATIONS

Harrington & King perforated materials offer a challenge to men of ideas. Designers and stylists are discovering an ever-increasing range of applications for perforated materials. For functional or decorative purposes, or where a combination of both is essential, H & K perforated materials are used in more products, in more accessories, in more places than ever before.

REDUCES TOOLING COSTS

The design, pattern and open area for almost every application may be selected from our thousands of perforating dies . . . at no charge for tooling. (If a special design is required, tools will be built to order.) In addition to the savings in tool costs, the perforating process itself is an economical method.

MATERIALS PERFORATED BY H&K

Harrington & King can perforate practically any material that can be obtained in coils, sheets or plates . . . from foil-thin to 1" thick. Metallic materials—steel, aluminum, stainless steel, brass, copper, monel, zinc, bronze, etc. Non-metallic materials—plastics, wood composition, paper, cloth, etc.

H&K engineers will be pleased to work with you on your requirements.

FILL-IN AND MAIL COUPON TO THE NEAREST H & K OFFICE

For a ready reference to H&K patterns—use this coupon

THE Harrington & King PERFORATING CO.

CHICAGO	DETROIT	NEW YORK
5630 Fillmore St.	19191 James Couzens	106 Liberty Street
Chicago 44, Illinois	Detroit 35, Michigan	New York, N. Y.

Please send me ☐ GENERAL CATALOG NO. 62
☐ FOLDER OF DECORATIVE PATTERNS

NAME_____ TITLE_____

COMPANY_____

STREET_____

CITY_____ ZONE_____ STATE_____

(Advertisement)

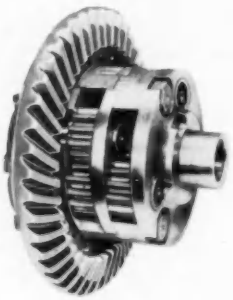
Dualoc Non Equalizing Differentials

FOR PASSENGER CARS AND TRUCKS

DUALOC Eliminates stalls due to one wheel spinning!
DUALOC gives control of vehicle with outside wheels on slippery or muddy shoulders!
DUALOC affords faster starts under adverse driving conditions!
DUALOC reduces possibility of dangerous skids on slippery surfaces!
DUALOC saves gas and unnecessary tire and motor wear by eliminating microscopic slippage under rear wheels and the necessity of racing motor to get out of stalls!
DUALOC increases efficiency of off-the-road vehicles by giving positive traction up to point where both wheels spin.

Dualoc Non-Equalizing Differentials have proven their ruggedness and ability to stand up under all kinds of driving conditions by giving millions of miles of carefree service to customers everywhere.





assembled unit of the Dualoc Non-Equalizing Differential complete with ring gear.

DYNAMOMETER TESTS
show power-dividing ratio 14 to 1

	Brake on Each Wheel			
INPUT SPEED	RIGHT SPEED	LOAD#	LEFT SPEED	LOAD#
500	108	10	118	10
Approx.	80	10	80	20
	88	10	84	30
	70	10	82	40
	96	10	100	50
	92	10	92	60
	78	10	76	70
	88	10	90	80
	76	10	80	90
	102	10	100	100
	105	10	108	110
	92	10	97	120
	68	10	70	130
		10	0	140

Dynamometer tests with brakes on each wheel show the Dualoc Power-Dividing Differential to have a power division ratio of 14 to 1. Dynamometer tests conducted with one wheel on greased plate established that a pleasure car equipped with Dualoc Power-Dividing Differential could pull 1250 pounds—whereas pick-up truck equipped with ordinary differential could only pull 500 pounds.

READ WHAT THESE USERS SAY OF THE DUALOC NON-EQUALIZING DIFFERENTIAL:

Fairmont Railway Motors Inc. Offer Dualoc Differential as Standard Equipment—They say:

The big advantage your drive offers in this vehicle is the increase in traction under adverse conditions. Rail can become slippery when wet, or if an oily stretch is encountered. This could seriously interfere with the proper operation of the vehicle, and when on the rail this is most undesirable. By using your drive, we assure ourselves of obtaining the maximum traction possible.

FAIRMONT RAILWAY MOTORS
Fairmont, Minn.

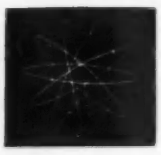
Manufacturers of motor cars and maintainance-of-way equipment.

Some time ago I installed a DUALOC Power-Dividing Differential on my personal car to definitely find out what this differential had to offer. It is hard for me to express in words all the things I have learned about it because nothing except a thorough demonstration of some of the tests I have put it through would be able to convince a person of the amazing difference this differential makes in an automobile. Jim Kittler Motors Moline, Illinois

I just recently had a Dualoc Drive Differential installed in my own demonstrator and I'm convinced that this is one of the greatest things ever developed for an automobile in so far as safety is concerned.

I am also convinced that with this differential offered as an accessory it would increase car sales tremendously. B. L. WEBER, Vice Pres., W & W Pontiac-Cadillac, Inc., Ottawa, Illinois.

In the past year or so, we have installed at least six DUALOC Power-Dividing Differentials in Oldsmobiles. It is hard to conceive the amazing difference this differential makes in the performance of an Oldsmobile. Safety from skidding, additional power, the ability to move straight ahead be it on ice, mud, etc., and its ability to pull itself through the most hazardous driving conditions make this differential outstanding in performance. John G. Jason, General Manager, Humphrey Cadillac & Olds. Co., Rockford, Illinois.

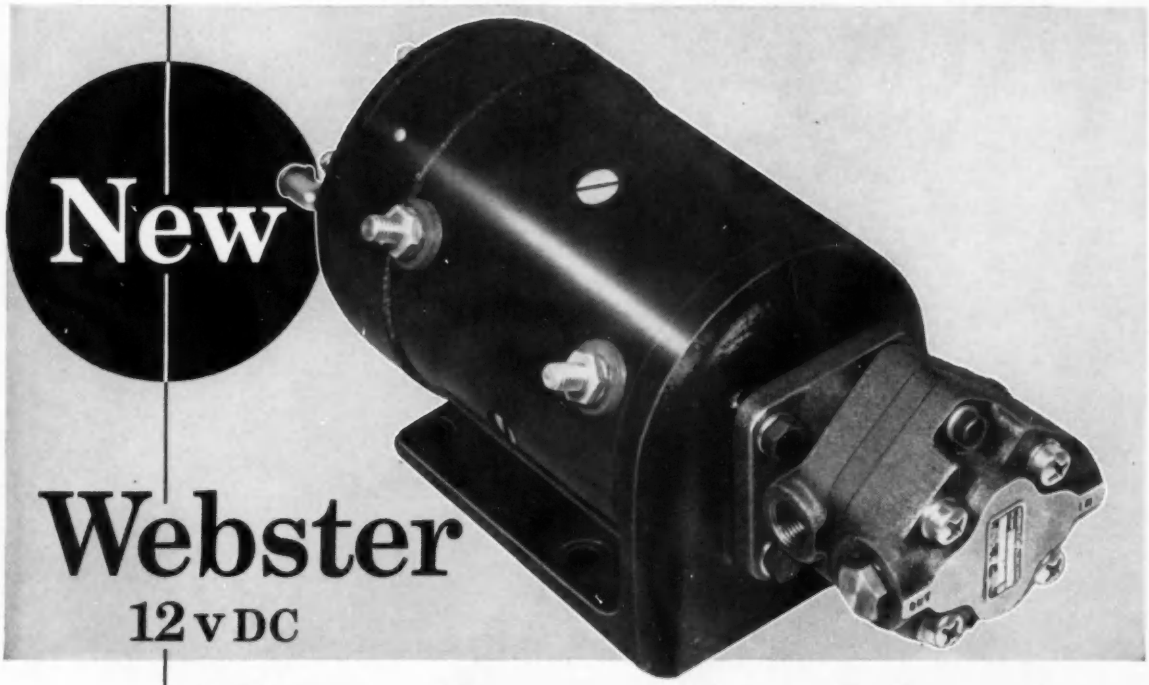


A New Concept in Power Transmission

For detailed information wire or write

DUALOC DRIVE, INC.
700 Twentieth St., Rockford, Illinois

Manufacturers of Non-equalizing Differentials for Cars, Trucks and Tractors



New Webster 12 v DC Motor Pump Combination

FOR MOBILE APPLICATIONS

for All Battery-operated Vehicles, Lift Trucks, Snow Plows, Tail Gate Lifts, Graders

• Here's WEBSTER's brand new motor-pump combination for all 12 volt battery-operated applications. It is furnished in a range of capacities up to 2½ gpm at 1000 PSI, with permissible pressures up to 3000 PSI.

This new unit carries a very reasonable price tag. And it incorporates the quality construction features and advanced engineering you've learned to expect from WEBSTER. For example:

Compact, Easy Mounting · The entire combination measures only 12⅜" in length. The clean, compact design includes a 4-bolt foot mounting integral with the motor for ease of installation in crowded locations.

Direct Coupled · Direct coupling eliminates alignment problems between pump and motor, does away with any need for external flexible couplings. The hydraulic power source can be readily installed near the power requirements, substantially shortening the length of hydraulic circuits—thus minimizing danger of leaks and reducing maintenance.

Adaptable · Pumps with greater or smaller capacities can be substituted without changing the mounting. Parts are standardized and interchangeable for greatest flexibility. Built-in relief valves and check valves can be provided if desired.

Nylon Valves—a Webster Exclusive · Nylon check and relief valves, exclusive with WEBSTER, for leakproof operation and longer life. Nylon plungers provide tight seal even if minute particles of foreign matter are caught between plunger and seat.

Special Motor Construction · Specially constructed heavy duty DC series motor gives high starting torque—can be supplied with stationary or removable brushes.

Write Today

FOR COMPLETE INFORMATION

☐ Please send us performance data on new 12 v DC Motor Pump Combination

☐ Please send catalog on complete WEBSTER line

Name_____

Title_____

Company_____

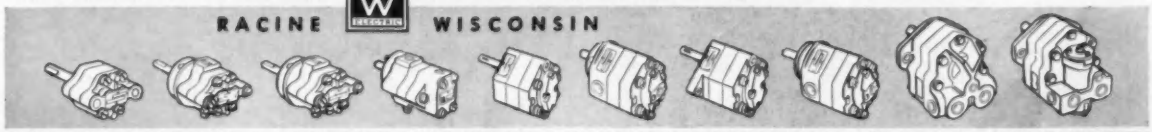
Street_____

City, Zone & State_____

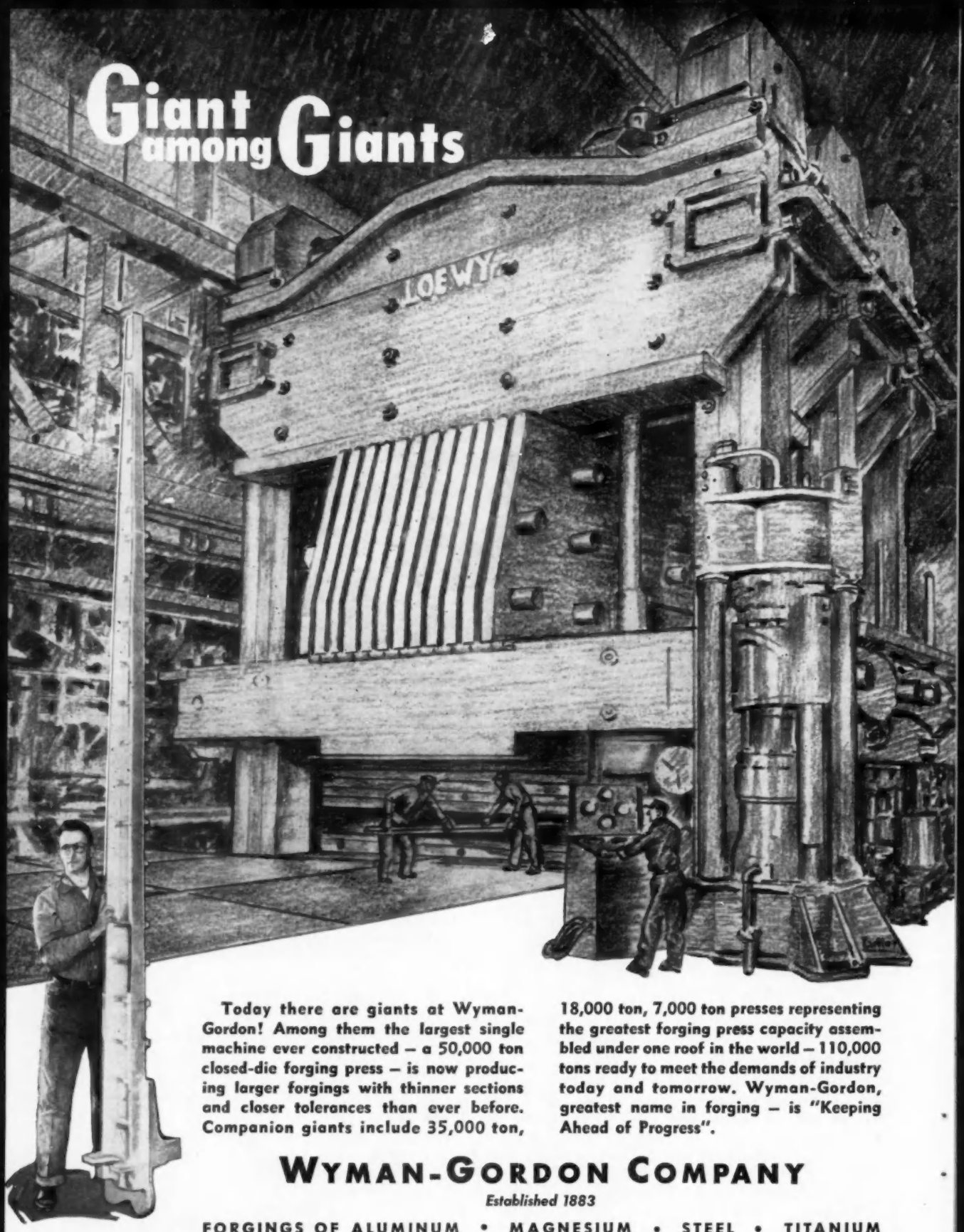
OIL HYDRAULICS DIVISION

WEBSTER ELECTRIC

RACINE WISCONSIN



MANUFACTURERS OF A COMPLETE LINE OF OIL HYDRAULIC PUMPS FROM 1/5 TO 30 GPM CAPACITY



Today there are giants at Wyman-Gordon! Among them the largest single machine ever constructed – a 50,000 ton closed-die forging press – is now producing larger forgings with thinner sections and closer tolerances than ever before. Companion giants include 35,000 ton, 18,000 ton, 7,000 ton presses representing the greatest forging press capacity assembled under one roof in the world – 110,000 tons ready to meet the demands of industry today and tomorrow. Wyman-Gordon, greatest name in forging – is "Keeping Ahead of Progress".

WYMAN-GORDON COMPANY

Established 1883

FORGINGS OF ALUMINUM • MAGNESIUM • STEEL • TITANIUM

WORCESTER 1, MASSACHUSETTS

HARVEY, ILLINOIS DETROIT, MICHIGAN



Setting seating for greater comfort

3M ADHESIVES

At the Flxible Coach Company in Millersburg, Ohio, they take great pride in the comfort of the vehicles they build.

They take great care, too, in making this comfort a lifelong feature. They use foam rubber cushioning for bus seats. And to help hold these cushions firmly in place they use a 3M adhesive, EC-164.

EC-164 secures a cloth shield backing to the rubber cushions. It also bonds the backed cushion to the metal bus seat. By using 3M adhesives instead of other fastening methods, Flxible has managed to improve the appearance and service of the finished product, and to cut production costs.

See what adhesives can do for you . . .
Flxible makes use of 3M adhesives in many ways. Have you considered 3M adhesives for your jobs? Your 3M sales engineer will be glad to discuss this with you. Call him in. For a free, informative booklet, write today. Address request to 3M, Dept. 313, 417 Piquette Ave., Detroit 2, Michigan.

PRODUCT OF 3M RESEARCH

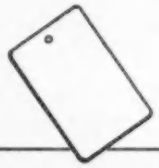
ADHESIVES AND COATINGS DIVISION **MINNESOTA MINING AND MANUFACTURING COMPANY**

417 PIQUETTE AVE., DETROIT 2, MICH. • GENERAL SALES OFFICES: ST. PAUL 6, MINN. • EXPORT: 99 PARK AVE., N.Y. 16, N.Y. • CANADA: P. O. BOX 757, LONDON, ONT.

MAKERS OF "SCOTCH" BRAND PRESSURE-SENSITIVE ADHESIVE TAPES • "SCOTCH" BRAND SOUND-RECORDING TAPE • "SCOTCHLITE" BRAND REFLECTIVE SHEETINGS • "3M" ABRASIVE PAPER AND CLOTH • "3M" ADHESIVES AND COATINGS • "3M" ROOFING GRANULES • "3M" CHEMICALS



When you want close quality control, *you use Bonderite under the paint.*



"GOLD STANDARD" PANELS are Bonderized

Parker's Customer Service lab prepares Bonderite-treated panels, used as the standard of comparison by manufacturers and paint companies. We have shipped about 400,000 in the last 12 months.

● The test panels in the plant laboratory tell the story: Bonderite in the finish line is the quality control engineer's friend. Performance standards are more easily maintained. And when standards are maintained in the plant, product performance in the field will please your customers.

The secret of Bonderite's uniform results begins in Parker manufacturing plants, where each lot of chemical is numbered and tested. A sample is kept permanently. Operating procedures for processing are simple, easily followed, easily checked. Long experience has smoothed out all the kinks!

Take the most positive way to control quality and assure finest paint finish, durability and appearance—use Bonderite.

**Bonderite, Bonderlube, Parco, Parco Lubrite, Parker Pre-Namel—Reg. U.S. Pat. Off.*

PARKER RUST PROOF COMPANY
2178 E. MILWAUKEE, DETROIT 11, MICHIGAN

Since 1914 — leader in the field

BONDERITE	BONDERITE and BONDERLUBE	PARCO COMPOUND	PARCO LUBRITE	TROPICAL
corrosion resistant paint base	aids in cold forming of metals	rust resistant	wear resistant for friction surfaces	heavy duty maintenance paints since 1883

RICHARDSON *helps improve molded auto parts*

Each of the molded parts pictured here had specifications which called for special materials often with unusual properties. All called for creative design approaches, both by customer and Richardson.

Richardson engineers, specialists in both molded and laminated plastics, will welcome the opportunity to help you. Write or phone for additional information.

THE RICHARDSON COMPANY
FOUNDED 1858
2678 Lake St., Melrose Park, Ill. (Chicago District)


MELROSE PARK, Ill.


INDIANAPOLIS, IND.

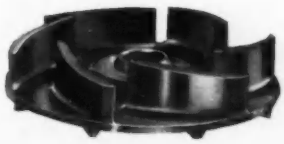

NEWNAN, GA.


OGDEN, UTAH

SALES OFFICES IN PRINCIPAL CITIES


NEW BRUNSWICK N. J.


TYLER, TEXAS



. . water pump impeller A special moisture resistant phenolic was specified for this part which must withstand the extremes of both high heat and intense cold, as well as strong torque action plus corrosion and cavitation resulting from the circulation of water in the car's cooling system.



. . timing gear The molded blank of this gear had to have high flexural characteristics . . also a good bond in the laminate section for ease in cutting gear teeth, and to insure necessary tooth strength. The manufacturer and Richardson developed a new material with high heat resistance. Result: Fine flexural strength in the web section . . more quiet operation . . . easier fabrication . . . easier assembly . . . *tripled gear life!*



. . radio antenna mast base This part had to have good surface appearance, high impact strength, high dielectric strength, and at the same time be weather resistant. A black phenolic material with an attractive high gloss finish was recommended.



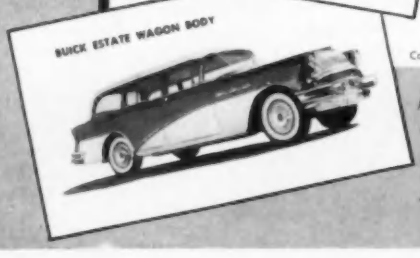
. . dashboard light lens Originally this part was designed as a clear lens. Later, when the specifications were changed to call for a translucent lens, the customer suggested that either the mold, or the clear parts, be sandblasted. . either process would have increased costs. Richardson suggested, instead, a special light-transmitting polystyrene. Result: 15% reduction in lens cost.

RICHARDSON PLASTICS
MOLDED AND LAMINATED









Here, at this table

PLANNED TOMORROWS ARE BORN!

The executive conference table of The Mitchell-Bentley Corporation is the nerve-center of a tremendously vital organization which is providing present needs of a diversified manufacturing clientele while keeping an eye on tomorrow. Sparked by fresh new thinking implemented by creative ability, The Mitchell-Bentley conference table is providing the engineering, and designing assistance that will make tomorrow's products better. If you have a problem in design, engineering, production, bear in mind that all the facilities of The Mitchell-Bentley Corporation are at your disposal —to serve you as it is serving many of the biggest names in industry.

Copyright 1955—Mitchell-Bentley Corporation

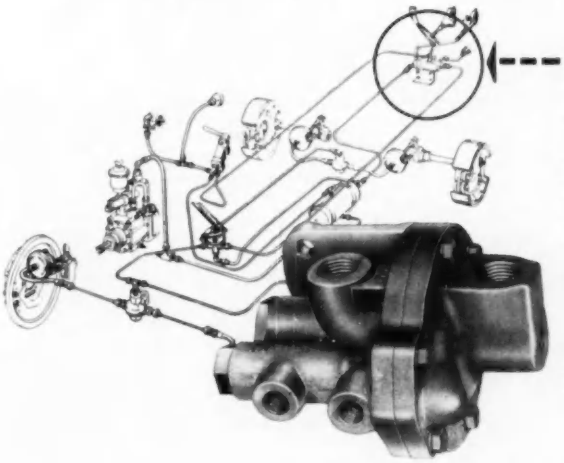
The MITCHELL-BENTLEY CORPORATION
IONIA, MICHIGAN

IONIA MANUFACTURING CO. DIV.
IONIA, MICHIGAN

OWOSSO MANUFACTURING CO. DIV.
OWOSSO, MICHIGAN

these Wagner Air Brake Protection Valves

safeguard tractor-trailer units



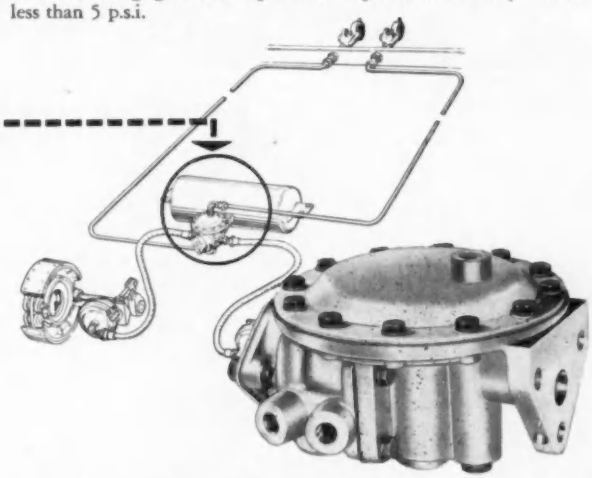
Protection for tractor. Wagner's Tractor Protection Valve does away with out-dated shut-off cocks that many times accidentally release tractor air pressure. Completely "foolproof." No preventive maintenance service is required because valve is completely and automatically tested each time hose line is coupled or uncoupled.

If the trailer is accidentally uncoupled, the tractor protection valve automatically seals the tractor brake system.

In the event of loss of reservoir pressure due to leakage in the trailer system, this automatic sealing action also preserves the brakes in the tractor.

If there's a sudden loss of air pressure due to breakaway, line failure, or normal uncoupling, the amount of air escaping from the tractor reservoir is negligible... air pressure drop in the tractor system is less than 5 p.s.i.

Protection for trailer



The Relay Quick-Release Emergency Valve is actually 3 valves in one.

1. As a relay unit, it controls braking applications in trailer... prevents ramming, binding or bumping.
2. Quick-release action speeds trailer brake release.
3. As an emergency unit, it automatically applies trailer brakes in case of trailer breakaway or an abnormal drop in trailer emergency line pressure.

Hose need not be disconnected when valve is serviced. For the complete story on these Wagner Air Brake Protection Valves, write for Bulletins KU-153 and KU-154.

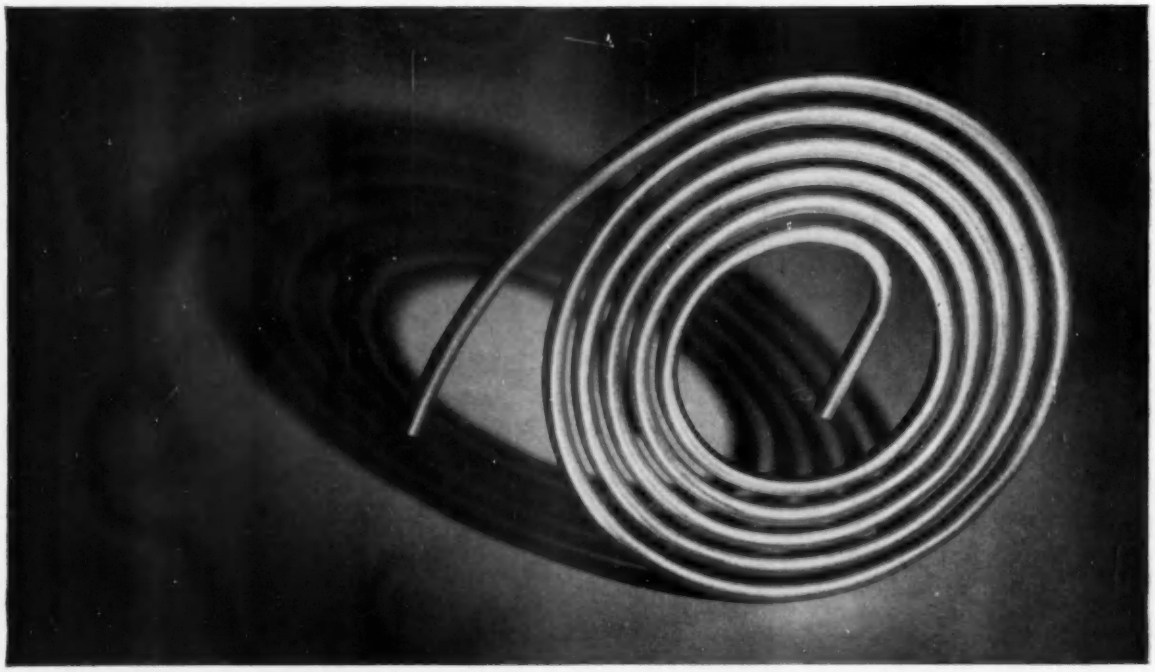
K56-1

Wagner Air Brake Systems are complete... everything needed for air-over-hydraulic or straight-air systems. Line includes treadle, lever and push type application valves... hand valves, the Wagner power cluster, diaphragms and power cylinders and of course the famous Wagner Rotary Air Compressor. For complete information write today for Catalog KU-201A.

Wagner Electric Corporation 6363 PLYMOUTH AVENUE • ST. LOUIS 14, MO., U. S. A.



LOCKHEED HYDRAULIC BRAKE PARTS and FLUID • NoRoL • CoMaX BRAKE LINING • AIR BRAKES • AIR HORNS • TACHOGRAPHS • ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES



Superior offers the widest range of sizes and alloys in top quality instrument tubing

Superior Tube Company produces the finest instrument tubing in a wide range of sizes and alloys—offers you as standard products what many makers would classify as specialty tubing.

1. NEEDLE TUBING

The stainless steel links in this recording instrument are made of Superior needle tubing. The high strength, stiffness, and strict dimensional tolerances characterizing this tubing—originally designed for surgical uses—have opened new fields of industrial applications when used as mechanical tubing.

2. PRESSURE AND SUPER PRESSURE TUBING

A spiral windpipe made of Superior 304 cold-drawn seamless stainless steel tubing. Pressure tubes are used to convey fluids at elevated temperatures and pressures. Produced in stainless, carbon and alloy steels in sizes to withstand pressures up to 100,000 psi.

3. BOURDON TUBING

A "C" tube element for a pressure gage. The shaped Bourdon tube serves as the actuating element for the majority of pressure indicating and recording instruments. Helix and spiral elements are also fabricated from the wide range of alloys available at Superior—a range that makes it possible to satisfy any set of conditions in the use of Bourdon tubing.

4. CAPILLARY TUBING

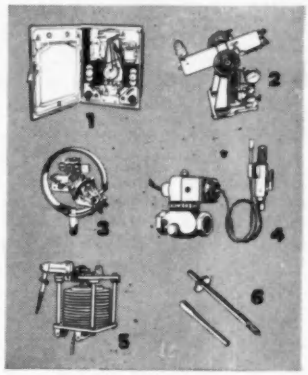
A thermostatic instrument pressure transmission element with a coiled unit made of Superior Type 321, capillary tubing. Superior capillary tubing is used primarily for transmitting temperature and pressure impulses from the source to a recording or indicating instrument. Capillary purposes, in general, require a heavy-wall tube with an ID of .006" to .030". Types 347, 321, 316, MONEL* and carbon steels are recommended analyses.

5. LARGE OD LIGHT WALL TUBING

A large OD light wall tubing bellows in a pressure actuating element. Present applications for large OD light wall tubing include bellows, low pressure heat exchanger tubes, flexible hose, aircraft ducting, fractional horsepower motor casings, ceramic drills, and casings for radioactive well logging instruments. Sizes offered up to 2½" OD.

6. MECHANICAL TUBING—INSTRUMENT LINE

Various fabricated parts—all made of Superior mechanical tubing. Superior mechanical tubing can be either seamless or WELDRAWN† grade used statically or dynamically, but not subjected to severe temperature or pressure. It is produced in sizes up to ⅝" OD within production limits, in many special shapes, and in over 63 standard analyses and mechanical properties.



Send for free copy of Bulletin 40—A Guide to the Selection and Application of Superior Tubing. Write Superior Tube Company, 2020 Germantown Ave., Norristown, Pa.

Round and shaped tubing available in Carbon, Alloy and Stainless Steels; Nickel and Nickel Alloys; Beryllium Copper; Titanium; Zirconium

Superior Tube

The big name in small tubing

NORRISTOWN, PA.

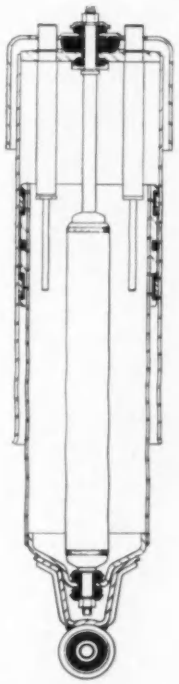
All analyses .010" to ⅝" OD—certain analyses in light walls up to 2½" OD

On the West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif.

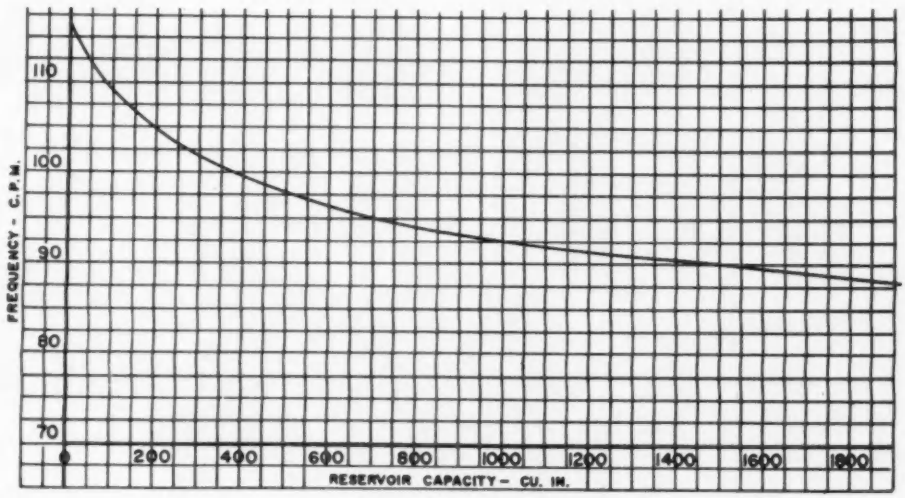
*Reg. T.M. International Nickel Co.
†Reg. T.M. Superior Tube Co.

Characteristics of the

Monroe Air Hydraulic Suspension System



Longitudinal section of the tubular type air spring unit



Vibration frequency vs. reservoir capacity, bellows type air spring, live load 866 lb

By Donald W. Lipp
Project Engineer
Monroe Auto Equipment Co.

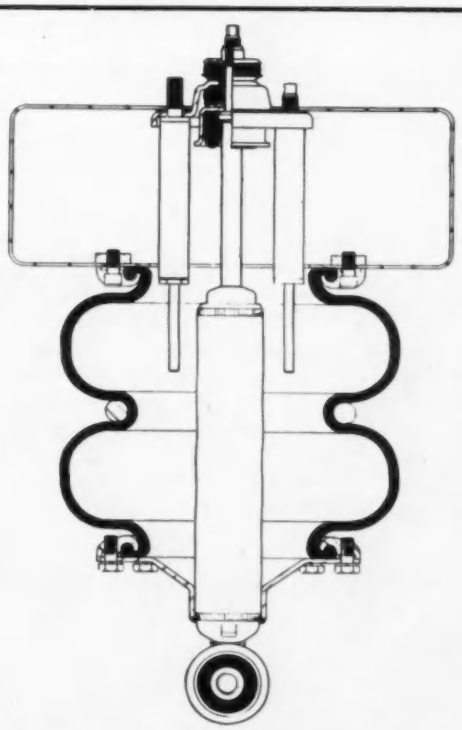
BASICALLY, the Monroe air hydraulic suspension system consists of an air spring with an integral hydraulic shock absorber, an automatic leveling valve, and an air compressor and reservoir tank.

Two types of air spring units have been under consideration. The first consists of two metal cylinders. These metal cylinders are mounted concentrically and telescope, one inside the other. The diameter of these tubes is such that within the range of air pressure desired or available, they will support the load of the vehicle.

Synthetic rubber seals are used to maintain the air pressure. These seals which incorporate non-extrusion rings have been road-tested over many thousands of test miles and have proved quite satisfactory.

One of the advantageous features of the air hydraulic suspension mentioned above was the reduction in friction change over the conventional leaf spring suspension. This is accomplished in part by the use of special anti-friction bearing rings in the metallic

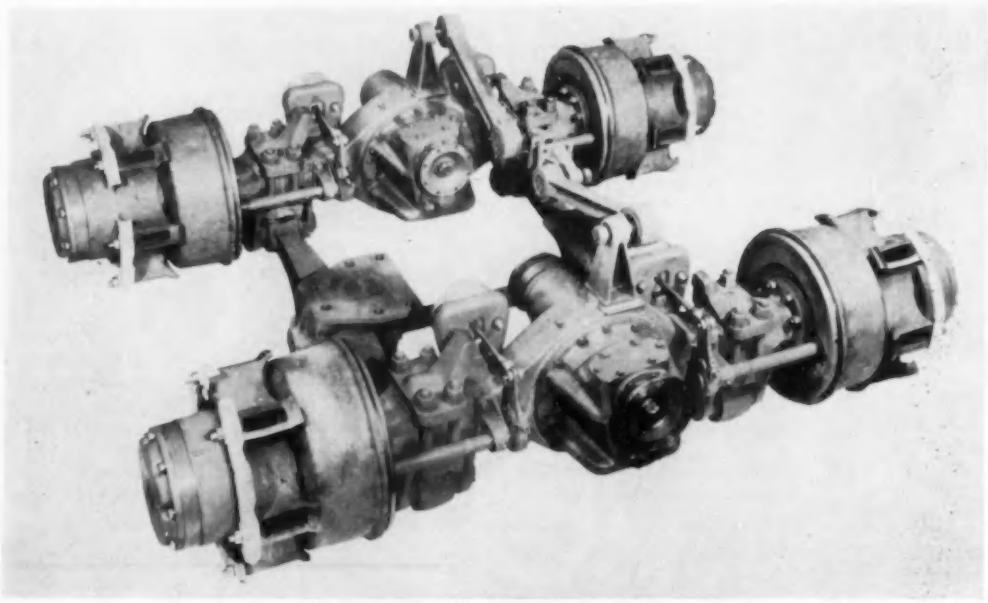
(*Turn to page* 396, *please*)



Rubber bellows type air spring

Heavy-Duty Tandem Drives

Designed for High-Static Loads



Clark tandem drive of 45,000 to 50,000 lb capacity

AMONG the features of two new Clark heavy-duty tandem axles is the use of planetary gearing at the wheels. These latest models, developed by Clark Equipment Company's Axle Division, also include through-type drives instead of conventional differential carriers.

One of the units has a 28,000-lb ground loading capacity, with an over-the-end static loading of 48,000 lb. The other is in the 45,000 to 50,000-lb ground loading range, with an over-the-end static rating of 72,000 to 90,000 lb.

The carrier is of double reduction type, with spiral bevel gears. Minimum mounting height and additional overhead clearance are obtained by the use of a through-type drive, rather than a conventional differential carrier. Axles are full-floating, with housings designed for the static loads applicable in crane carriers and other off-the-highway vehicles. Drive at the wheels is by planetary gearing for the purposes of reducing torsional wind-up in the axle shafts and torque loads on the differential and shafts, as well as permitting smaller size shafts and other components without sacrifice in strength. Equalizer beam and torque rods are rubber-mounted.

The wheels are cast spoke type for 20-in. demountable rims. Three sizes of tires, 10.00 x 20, 11.00 x 20 and 12.00 x 20 can be used. Brakes are 16¼ by 2½-in. hydraulic; 14½ by 4 or 6 by 16½ by 6-in. air.

• • •

Italian 1955 Car Production Jumps 24 Per Cent Over 1954

Italy turned out 230,833 passenger cars last year, an increase of 24 per cent over its 1954 output. Total vehicle production reached 286,756 units, an increase over the entire range with the exception of trucks.

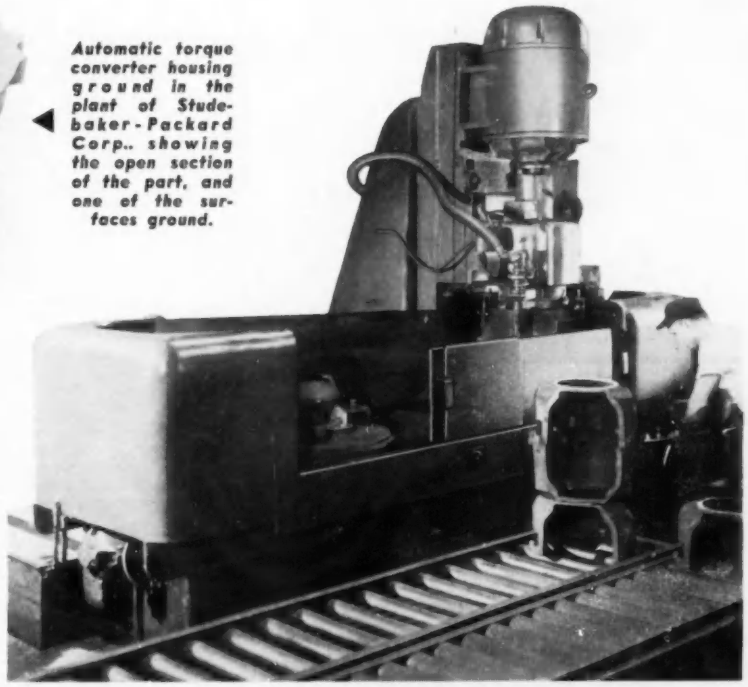
Italian exports in 1955 were 69.1 per cent greater than in 1954. The total for the year was 74,645 vehicles, of which 69,397 were passenger cars, 750 vans, 3915 trucks, and 583 buses. Most of the gain in production and export of passenger cars was registered by the Fiat rear-engine "600" model and the "1100" type.

Italy's best vehicle buyer was Germany, which bought 12,615 automobiles, followed by Austria with 11,247. Other customers in order of importance were Switzerland, Belgium, Sweden, Netherlands, Malaya, India, Spain, and Brazil.

Production Grinding on Torque Converter Housings



Automatic torque converter housing ground in the plant of Studebaker-Packard Corp., showing the open section of the part, and one of the surfaces ground.



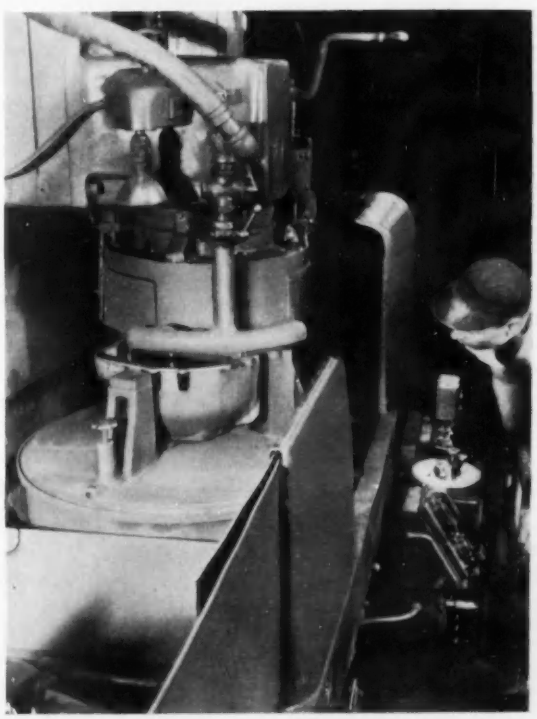
View of the Mattison duplex machine in operation. One workpiece is under the wheelhead. Another workpiece is seen mounted on the rotary table to the left, ready for traversal under the wheel. The two rotary tables on this machine are mounted on an auxiliary table which can be moved back and forth to bring first one rotary table, then the other, under the grinding spindle.

OPEN-SECTION castings, when they must be finished to a high degree of dimensional accuracy, call for very careful handling, especially in the grinding operation, where heat distortion may occur. This is particularly true on castings where thickness of wall is small as against overall size of the unit.

Automatic torque converter housings being ground at the Studebaker-Packard plant, South Bend, Indiana, are an interesting case in point. These housings are castings of gray iron, and are difficult to grind, but are handled advantageously on a Mattison duplex grinder. Two surfaces are ground from the rough, maintaining flatness and parallelism within 0.0015 in.

The duplex grinder employed is one with a single vertical spindle, but with two rotary tables. Such a grinder is often utilized to make fuller use of both spindle time and operator time, because it allows an

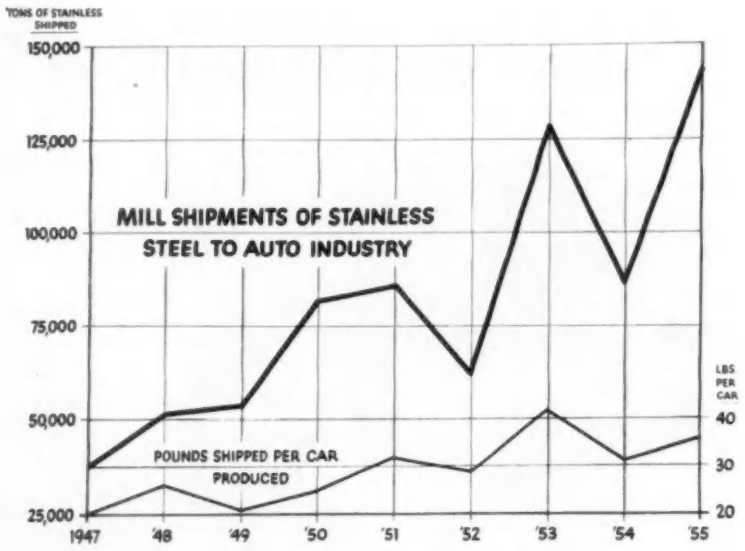
(*Turn to page* 390, *please*)



Workpiece and fixture on the grinder table employed for grinding the larger-area surface.

MILL SHIPMENTS OF STAINLESS to the AUTOMOBILE INDUSTRY

Year	Tons Shipped
1947	35,591
1948	50,905
1949	53,359
1950	81,800
1951	85,346
1952	62,317
1953	127,993
1954	86,303
1955	143,016



Record Tonnage for Stainless Steel Trim

MILL shipments of stainless steel to the automobile industry during 1955 broke all previous records with a 66 per cent increase over 1954. Shipments totalled 143,016 tons, over 20 per cent of all stainless shipments for the year.

As shown in the chart, increased shipments are not only the result of greater car production; they reflect an increasing trend in the amount of stainless shipped per car produced. Although cyclic, the per-car figures show a jump from 20 lb per car in 1947 to 36 lb per car last year. These figures do not include shipments from warehouse stock.

Approximately 95 per cent of the stainless shipped to the automobile industry during 1955 was in the form of cold rolled strip used for interior and exterior trim. Although there are numerous "standard" applications for stainless trim such as body moldings, window moldings and full wheel covers, shipments to the industry are tied closely to exterior design.

The most widely used type of stainless in the industry is AISI Type 430 which contains approximately 17 per cent chromium. This is used for body moldings, window trim, interior beading, stone shields, rocker panels, etc. Chromium-nickel stainless is also used, largely for full wheel covers, exhaust valves, and tail pipe extensions.

Stainless is the only metal which can be used for trim without plating or other surface treatments although some producers are using a chromium flash, without copper or nickel, solely to obtain a color match with chromium plated parts.

The current year is expected to see the first truly structural uses of stainless in body construction. Heretofore, most automobile uses concentrated on the finish and corrosion resistance which these special steels offer, despite the fact that fully-hard, austenitic stainless steel is the world's strongest, commercially available structural material.

• • •

U. S. Steel Takes Firm Steps To Relieve Engineer Shortage

Great concern over the scarcity of engineers was voiced by Roger M. Blough, chairman of the board, U. S. Steel Corp., in his keynote address before the Winter General Meeting of the American Institute of Electrical Engineers, held recently in New York City. Mr. Blough stated that greater economic recognition is one way to solve the shortage of engineers.

However, this is not the sole solution, Mr. Blough went on to say. U. S. Steel, along with other industries, is now trying to develop a program that might be called "The Care, Feeding and Propagation of Engineers."

In this respect, U. S. Steel is increasing the use of electronic machines and equipment to perform some of the routine work of engineers. For example, one complex computer now in operation is saving as much as 10,000 engineering hours on one U. S. Steel project.

U. S. Steel also has a program of advanced study which is conducted by its own men who are experts in their respective fields. Many employees are being trained on the job to become technicians and assistants to engineers. These technicians are then encouraged to become engineers themselves by attending evening classes offered by local universities.

AVIATION SECTION



AIRCRAFT

AIRCRAFT—ENGINES

PRODUCTION

REGISTRATIONS

AIRPORTS AND FIELDS

AIR CARRIER STATISTICS

SPECIFICATIONS

AI
AUTOMOTIVE INDUSTRIES
38TH ANNUAL STATISTICAL ISSUE 1956

DC-3 . . . DC-4 . . . DC-6 . . . DC-7

23 billion-mile fastener field test

How many fasteners can you name that have been "family" tested for four generations? Behind this rare group portrait of the illustrious Douglas DC's lie literally billions of miles of severe usage in every climate and condition on the face of the earth. And tens of millions of Elastic Stop® nuts have gone every inch of the way, performing critical fastening jobs on engines and air frames. In fact, for over three decades of Douglas air frame development, Elastic Stop nuts, with their familiar red collars, have been specified for critical structural fastenings.

If you recognize the practical value of "flight-tested" experience on all types of air frames and engines . . . you'll rely on Elastic Stop nuts.

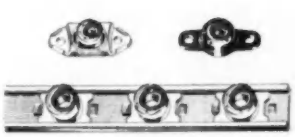


ELASTIC STOP NUT CORPORATION OF AMERICA

Dept. N95-35 · 2330 Vauxhall Road · Union, N. J.

Red *Nylon* INSERTS are standard on all ESNA fixed fasteners guaranteeing:

- extended reusability
- vibration-proof locking
- thread sealing . . . no galling
- immediate identification
- adaptability to all shapes and sizes of aircraft fittings
- suitability to production line assembly methods





AVIATION DATA

PRODUCTION • REGISTRATIONS • EXPORTS

Aircraft and Aircraft Engine Production, by Years

Year	Aircraft				Aircraft Engines		Value of All Products
	Civil	Military	Total	Value	Number	Value	
1927	1,386	609	1,995	$ 14,504,999	1,400	$ 9,493,000	$ 30,897,000•
1928	3,499	847	4,346	.....	.....	.....	64,662,000•
1929	5,414	779	6,193	51,508,120	6,276	24,966,000	91,051,000•
1930	2,601	836	3,437	.....	.....	.....	60,846,000•
1931	1,947	853	2,800	21,790,000	2,794	13,779,000	48,540,000•
1932	896	500	1,396	.....	.....	.....	24,861,000•
1933	993	331	1,324	15,859,395	1,822	8,651,247	23,357,000•
1934	1,222	393	1,615	.....	.....	.....	43,892,000•
1935	1,374	336	1,710	17,454,331	2,866	12,610,285	42,506,000•
1936	2,152	858	3,010	.....	.....	.....	78,149,000•
1937	2,915	858	3,773	38,664,153	6,214	28,576,971	114,093,000•
1938	2,698	925	3,623	.....	.....	.....	198,293,000•
1939	4,935	921	5,856	75,872,587	11,172	74,282,000	247,905,000
1940	6,785	6,019	12,794	146,000,000	22,667	101,000,000	370,000,000
1941	6,844	19,433	26,277	819,000,000	58,181	436,000,000	1,804,000,000
1942	n.p.	47,836	47,836	2,762,000,000	138,089	1,314,000,000	5,817,000,000
1943	n.p.	85,898	85,898	6,696,000,000	227,116	2,226,000,000	12,514,000,000
1944	n.p.	96,318	96,318	9,233,000,000	256,911	3,075,000,000	16,047,000,000
1945	2,047	47,714	49,761	5,141,000,000	109,650	1,650,000,000	8,279,000,000
1946	35,001	1,669	36,670	362,772,192	43,407	126,860,393	629,505,722
1947	15,870	2,100	17,970	444,421,000	21,178	237,078,000	1,241,508,000
1948	7,302	2,489	9,791	114,207,590	9,032•	30,017,250	221,638,143‡
1949	3,545	....	3,545	121,447,000	3,982•	14,237,000	224,063,865‡
1950	3,520	....	3,520	100,097,000	4,314•	20,058,000	217,162,000‡
1951	2,477	....	2,477	88,844,000	4,580•	25,909,000	271,031,000‡
1952	3,509	....	3,509	197,151,000	5,382•	40,722,000	426,970,000‡
1953	4,134	....	4,134	244,418,000	6,647•	70,854,000	495,404,000‡
1954	3,389	....	3,389	295,738,000	5,519•	60,647,000	522,915,000‡
1955	4,753	....	4,753	271,010,000	7,639•	59,147,000	524,201,000‡

Sources of data: Odd years 1919 through 1939 and the year 1947, as reported by the Census of Manufactures. For the years 1940 through 1946, as reported by War Production Board and Civilian Production Administration. 1947 through 1954, as reported by Civil Aeronautics Administration and Bureau of the Census.

n.p.—No production other than military.

•—Value of aircraft, engines, parts, parachutes, etc., from C.A.A. and Bureau of the Census.

‡—Value of shipments of all products of civil aircraft and civil aircraft engine plants.

•—Civil aircraft engine production only.

Note:—The value of engines, propellers and power plant accessories installed in the aircraft are not included in the value of the aircraft reported for 1931 through 1955.

Shipments of Complete Civil Aircraft and Parts

In Units and Their Value

As reported by the Bureau of the Census and C.A.A.

Month	Complete Aircraft Number		Complete Aircraft Value		Value of Aircraft Parts		Total Value Aircraft and Parts	
	1955	1954	1955	1954	1955	1954	1955	1954
January	350	278	$23,337,000	$24,302,000	$5,446,000	$6,188,000	$28,783,000	$30,490,000
February	357	240	26,041,000	36,830,000	7,173,000	7,299,000	33,214,000	44,129,000
March	478	312	27,761,000	23,276,000	8,513,000	7,892,000	36,274,000	31,168,000
April	438	359	17,675,000	35,883,000	10,674,000	7,360,000	28,349,000	43,243,000
May	486	309	31,795,000	26,554,000	8,273,000	7,721,000	40,068,000	34,275,000
June	548	316	34,175,000	31,709,000	8,478,000	6,605,000	42,653,000	38,314,000
July	354	293	28,804,000	23,895,000	8,770,000	6,251,000	37,574,000	30,146,000
August	241	265	24,386,000	18,721,000	8,137,000	6,544,000	32,523,000	25,265,000
September	341	265	18,525,000	26,336,000	9,657,000	10,206,000	28,182,000	36,542,000
October	345	174	16,978,000	16,849,000	9,977,000	8,560,000	26,955,000	25,409,000
November	337	288	7,658,000	18,589,000	10,329,000	6,306,000	17,987,000	24,895,000
December	478	290	13,875,000	12,794,000	8,504,000	5,541,000	22,379,000	18,335,000
Total	4,753	3,389	$271,010,000	$295,738,000	$103,931,000	$86,473,000	$374,941,000	$382,211,000

Shipments of Civil Aircraft Engines and Parts

In Units and Their Value

As reported by the Bureau of the Census and C.A.A.

Month	Civil Aircraft Engines Number		Civil Aircraft Engines Value		Value of Engine Parts		Total Value Engines and Parts	
	1955	1954	1955	1954	1955	1954	1955	1954
January	626	383	$5,996,000	$4,840,000	$6,396,000	$6,565,000	$12,392,000	$11,405,000
February	626	434	6,115,000	5,952,000	6,132,000	5,682,000	12,247,000	11,634,000
March	680	465	6,319,000	5,089,000	6,475,000	7,887,000	12,794,000	12,976,000
April	657	546	5,169,000	5,273,000	6,172,000	6,556,000	11,341,000	11,829,000
May	704	498	4,780,000	5,323,000	6,990,000	5,886,000	11,770,000	11,209,000
June	706	486	4,329,000	4,787,000	7,588,000	7,401,000	11,917,000	12,188,000
July	522	422	4,146,000	4,845,000	6,978,000	6,553,000	11,124,000	11,398,000
August	464	327	3,177,000	4,650,000	6,150,000	6,195,000	9,327,000	10,845,000
September	577	371	3,807,000	3,352,000	7,495,000	6,159,000	11,302,000	9,511,000
October	614	488	4,285,000	4,811,000	9,017,000	7,056,000	13,302,000	11,867,000
November	688	537	4,677,000	5,389,000	9,026,000	6,948,000	13,703,000	12,337,000
December	775	542	6,347,000	6,336,000	11,694,000	7,169,000	18,041,000	13,505,000
Total	7,639	5,519	$59,147,000	$60,647,000	$90,113,000	$80,057,000	$149,260,000	$140,704,000

• AVIATION DATA •

Shipments of Complete U. S. Civilian Aircraft and Engines 1949-1954

Dollars, Horsepower and Weight in Thousands

As reported by the Bureau of the Census and C.A.A.

COMPLETE AIRCRAFT	1955	1954	1953	1952	1951	1950
Total Units	**4,753**	**3,389**	**4,134**	**3,509**	**2,477**	**3,320**
Under 3000 lbs. airframe weight	4,508	3,098	3,825	3,057	2,279	3,391
3000 lbs. airframe weight and over	245	291	309	452	198	129
Total Airframe Weight	**10,172.6**	**10,493.5**	**10,373.5**	**9,322.1**	**4,982.4**	**5,960.7**
Under 3000 lbs. airframe weight	4,496.8	2,963.0	3,076.3	2,416.1	1,779.3	2,655.2
3000 lbs. airframe weight and over	5,675.8	7,530.5	7,297.2	6,906.0	3,203.1	3,305.5
Total Value	**$271,010**	**$295,738**	**$244,418**	**$197,151**	**$88,844**	**$100,097**
Under 3000 lbs. airframe weight	62,872	41,402	33,388	23,852	14,201	12,615
3000 lbs. airframe weight and over	208,138	254,336	211,030	173,299	74,643	81,482
AIRCRAFT ENGINES						
Total Units	**7,639**	**5,519**	**6,647**	**5,382**	**4,580**	**4,314**
Total Horsepower (in thousands)	**3,337.4**	**3,360.4**	**4,399.2**	**2,936.4**	**2,093.8**	**1,645.5**
Total Value (in thousands)	**$59,147**	**$60,647**	**$70,854**	**$40,722**	**$25,909**	**$20,058**

Civil Aircraft Shipments by Total Rated Horsepower

As reported by the Bureau of the Census and C.A.A.

Month	Under 400 hp		400 hp and Over		Total Aircraft	
	1955	1954	1955	1954	1955	1954
January	317	253	33	25	350	278
February	309	205	48	35	357	240
March	424	280	54	32	478	312
April	395	316	43	43	438	359
May	434	277	52	32	486	309
June	469	273	69	43	538	316
July	301	257	53	36	354	293
August	189	235	52	30	241	265
September	282	208	59	57	341	265
October	292	145	53	29	345	174
November	298	256	39	32	337	288
December	439	263	49	27	488	290
Total	4,149	2,968	604	421	4,753	3,389

Civil Aircraft Shipments by Number of Places

As reported by the Bureau of the Census and C.A.A.

Month	5 Places & Less		Over 5 Places		Total Aircraft	
	1955	1954	1955	1954	1955	1954
January	322	253	28	25	350	278
February	320	205	37	35	357	240
March	442	280	36	32	478	312
April	412	316	26	43	438	359
May	449	277	37	32	486	309
June	487	273	51	43	538	316
July	319	258	35	35	354	293
August	206	238	35	27	241	265
September	298	212	43	53	341	265
October	312	147	33	27	345	174
November	315	258	22	30	337	288
December	423	265	65	25	488	290
Total	4,305	2,982	448	407	4,753	3,389

Airframe Weights (Excluding Spares) of Civil Aircraft Shipments

In thousands of Pounds, as reported by Bureau of the Census and C.A.A.

Month	1955	1954	1953	1952	1951	1950	1949	1948
January	857.7	882.3	868.5	622.9	357.0	530.9	280.6	460.5
February	962.9	1,221.3	813.5	761.9	292.7	413.7	774.4	474.6
March	1,032.0	877.0	612.8	826.0	316.7	402.5	709.8	701.5
April	749.0	1,225.9	755.0	731.3	697.0	442.1	571.4	840.2
May	1,139.0	961.0	844.1	955.3	589.0	522.9	451.4	1,397.6
June	1,210.3	1,098.7	901.2	754.8	456.2	573.7	537.7	1,370.3
July	932.5	875.3	975.1	777.7	379.1	467.4	478.4	977.5
August	757.6	671.5	781.8	712.9	319.6	552.9	451.4	1,397.6
September	696.4	885.3	899.2	932.0	330.4	523.1	676.0	828.9
October	658.1	574.8	782.6	915.8	227.3	335.0	647.2	794.2
November	447.8	698.0	1,010.6	777.9	515.8	703.1	527.3	598.8
December	729.9	522.4	1,129.1	763.8	630.2	506.9	584.2	588.8
Total	10,172.6	10,493.5	10,373.5	9,532.3	5,111.0	5,960.7	6,744.4	9,982.5

Employment in Aircraft and Engine Plants

Bureau of Labor Statistics

Month	Complete Aircraft Plants		Aircraft Engine and Parts Plants	
	1955	1954	1955	1954
January	472,800	502,700	149,000	179,500
February	477,000	469,900	148,600	178,800
March	477,100	479,900	148,800	178,200
April	478,000	498,900	146,600	174,500
May	476,800	496,200	143,100	169,500
June	476,300	493,800	142,100	166,300
July	481,900	498,800	140,700	162,800
August	482,100	499,800	140,500	154,200
September	485,500	496,400	143,200	161,600
October	489,300	490,800	144,900	160,200
November	....	468,200	....	149,900
December	....	470,900	....	150,000

Total Engine Hp of Civil Aircraft Engine Shipments

In thousands, as reported by Bureau of the Census and C.A.A.

Month	1955	1954	1953	1952	1951
January	320.7	285.8	267.8	247.9	181.5
February	327.8	336.2	188.8	264.9	176.7
March	340.6	293.2	305.4	253.8	179.8
April	287.8	298.7	378.1	322.6	200.5
May	279.7	298.6	391.2	260.2	216.8
June	258.0	265.3	400.5	270.2	166.1
July	235.4	262.2	400.6	228.6	164.2
August	183.9	248.9	378.4	181.7	149.6
September	228.3	191.9	418.1	271.0	191.4
October	251.3	266.5	463.1	262.8	77.4
November	271.8	284.0	412.6	198.0	193.7
December	262.1	228.1	394.6	174.7	196.0
Total	3,337.4	3,360.4	4,399.2	2,936.4	2,093.8

Registrations of Civil Aircraft

As of December 31, 1955

Compiled from records of the Civil Aeronautics Administration

Registered U. S. Civil Aircraft by Year of Manufacture

Year of Manufacture	Number of Aircraft			Per Cent of Total		
	Active	Inactive	Total	Active	Inactive	Total
1955	3,501	2	3,503	5.8	0.0	4.1
1954	2,413	200	2,613	4.0	0.8	3.1
1953	2,907	348	3,255	4.8	1.4	3.8
1952	2,479	255	2,734	4.1	1.0	3.2
1951	1,607	179	1,786	2.7	0.7	2.1
1950	2,395	334	2,729	4.0	1.3	3.2
1949	2,243	315	2,558	3.7	1.3	3.0
1948	4,284	818	5 102	7.1	3.3	6.0
1947	8 187	2 096	10,283	13.5	8.4	12.1
1946	17,673	6,669	24,342	29.2	26.8	28.5
1945	1,021	585	1,606	1.7	2.4	1.9
1944	702	455	1,157	1.2	1.8	1.3
Other Years	11,020	12,632	23,652	18.2	50.8	27.7
Total	60,432	24,888	85,320	100.0	100.0	100.0

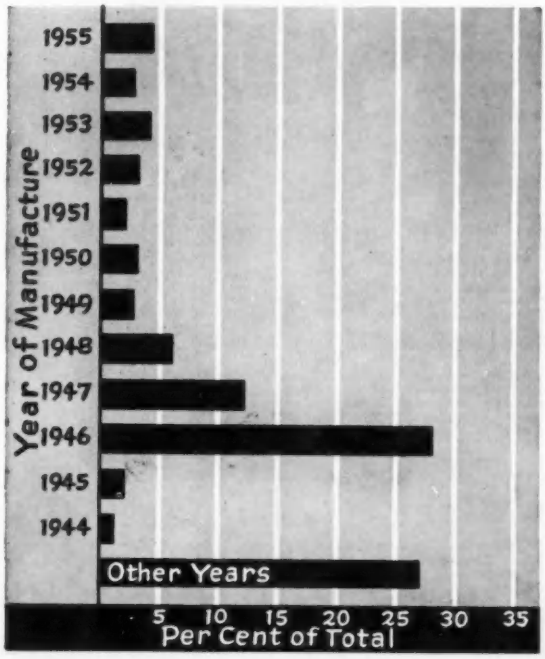
Registered U. S. Civil Aircraft by Make

Ranked According to Active Aircraft

Manufacturer	Number of Aircraft			Per Cent of Total		
	Active	Inactive	Total	Active	Inactive	Total
Piper	13,536	5,655	19,191	22.4	22.7	22.5
Cessna	11,295	2,262	13,557	18.7	9.1	15.9
Aeronca	5,825	3,143	8,968	9.6	12.7	10.5
Beech	4,501	498	4,999	7.4	2.0	5.9
Convair[1]	4,268	2,614	6,882	7.1	10.5	8.1
Luscombe	2,978	993	3,971	4.9	4.0	4.6
Taylorcraft	2,960	2,073	5,033	4.9	8.3	5.9
Ercoupe	2,706	852	3,558	4.5	3.4	4.2
Boeing[2]	2,146	1,276	3,422	3.6	5.1	4.0
Fairchild	830	1,318	2,148	1.4	5.3	2.5
All Others	9,387	4,204	13,591	15.5	16.9	15.9
Total	60,432	24,888	85,320	100.0	100.0	100.0

[1]—Includes Stinson. [2]—Includes Stearman.

29% OF CIVIL AIRCRAFT IN USE ARE 10 YEARS OLD



Registered Aircraft and Pilot Certifications

As of Dec. 31	Registered Civil Aircraft	Certified Airplane Pilots			
		Total	Airline Transport	Commercial	Private
1930	9,818	15,280	....	7,847	7,433
1931	10,680	17,739	....	8,513	9,226
1932	10,324	18,594	330	7,967	10,297
1933	9,284	13,960	554	7,635	5,771
1934	8,322	13,949	676	7,484	5,789
1935	9,072	14,805	736	7,362	6,707
1936	9,229	15,952	842	7,288	7,822
1937	10,836	17,681	1,064	6,411	10,206
1938	11,159	22,983	1,159	7,839	13,985
1939	13,772	33,706	1,197	11,677	20,832
1940	17,928	69,829	1,432	18,791	49,607
1941	26,013	129,947	1,587	34,578	93,782
1942	27,170	166,626	2,177	55,760	108,689
1943	27,180	173,206	2,315	63,940	106,951
1944	27,919	183,382	3,046	68,449	111,888
1945	37,789	296,895	5,815	162,873	128,207
1946	81,002	400,061	7,654	203,251	189,156
1947	94,821	433,241	7,059	181,912	244,270
1948	95,997	491,306	7,762	176,845	306,699
1949	92,622	525,174	9,025	187,769	328,380
1950	92,809	N.A.	N.A.	N.A.	N.A.
1951	88,545	580,574	10,813	197,900	371,861
1952	89,313	581,218	11,357	193,575	376,286
1953	91,102	585,974	12,757	195,363	377,854
1954	92,067	596,128	13,137	197,995	384,996

Estimated Miles Flown in General Aviation by Types

This table excludes all aircraft operated by scheduled airlines and by CAA

As reported by the Civil Aeronautics Administration

Year	Total Miles Flown	Business		Commercial[1]		Instructional		Pleasure		Other	
		Miles	Per Cent	Miles	Per Cent	Miles	Per Cent	Miles	Per Cent	Miles	Per Cent
1946	874,740,000	121,530,000	14	107,935,000	12	478,825,000	55	156,555,000	18	9,795,000	1
1947	1,502,420,000	228,125,000	15	150,260,000	10	848,670,000	57	262,060,000	17	13,305,000	1
1948	1,469,540,000	298,945,000	20	142,640,000	10	754,740,000	52	255,150,000	17	18,065,000	1
1949	1,128,992,000	309,062,000	27	166,138,000	15	378,660,000	34	269,892,000	24	5,249,000	..
1950	1,061,500,000	339,700,000	32	180,500,000	17	286,600,000	27	244,100,000	23	10,600,000	1
1951	975,480,000	379,845,000	39	190,480,000	20	190,195,000	19	200,265,000	21	14,695,000	1
1952	972,055,000	419,705,000	43	217,865,000	22	144,035,000	15	165,795,000	17	24,655,000	3
1953	1,045,346,000	499,166,000	48	209,937,000	20	120,700,000	11	196,174,000	19	19,369,000	2
1954	1,105,000,000	563,600,000	51	232,000,000	21	88,400,000	8	198,900,000	18	22,100,000	2

[1]—Includes contract, charter, industrial and commercial agricultural flying.

U. S. Civil Aircraft Registrations by States

As of December 31, of each year

As reported by Civil Aeronautics Administration

State	1955 Active	1955 Inactive	1955 Total	Total Aircraft 1953	1952	1951
Alabama	468	200	668	747	752	787
Arizona	780	394	1,174	1,262	1,164	1,094
Arkansas	680	338	1,018	1,093	1,080	1,119
California	6,766	3,160	9,926	10,369	10,067	9,845
Colorado	852	316	1,168	1,256	1,263	1,291
Connecticut	469	195	664	629	603	601
Delaware	156	68	224	210	275	283
Dist. of Columbia	331	115	446	567	554	553
Florida	1,442	1,016	2,458	2,686	2,612	2,546
Georgia	766	355	1,121	1,242	1,169	1,159
Idaho	631	171	802	870	906	905
Illinois	3,487	1,254	4,741	5,030	4,923	4,779
Indiana	1,834	704	2,538	2,757	2,679	2,675
Iowa	1,629	337	1,966	2,064	2,126	2,276
Kansas	1,641	559	2,200	2,503	2,477	2,462
Kentucky	455	186	641	704	655	678
Louisiana	863	463	1,326	1,284	1,159	1,105
Maine	314	120	434	527	550	583
Maryland	551	248	799	864	837	859
Massachusetts	877	418	1,295	1,431	1,425	1,402
Michigan	2,625	986	3,611	3,899	3,876	3,914
Minnesota	1,675	545	2,220	2,164	2,092	2,048
Mississippi	559	308	867	868	802	762
Missouri	1,498	467	1,965	2,050	1,924	1,892
Montana	868	255	1,123	1,179	1,165	1,111
Nebraska	1,231	334	1,565	1,763	1,790	1,790
Nevada	307	137	444	471	439	390
New Hampshire	135	68	203	215	221	235
New Jersey	1,199	590	1,789	1,931	1,826	1,767
New Mexico	534	246	780	772	754	703
New York	2,969	1,286	4,255	4,497	4,397	4,308
North Carolina	1,055	471	1,526	1,600	1,547	1,627
North Dakota	625	349	974	1,148	1,183	1,256
Ohio	2,904	1,211	4,115	4,309	4,157	4,187
Oklahoma	1,311	501	1,812	1,996	2,026	1,994
Oregon	1,176	443	1,619	1,760	1,747	1,747
Pennsylvania	2,413	975	3,388	3,910	3,925	4,006
Rhode Island	133	51	184	197	187	203
South Carolina	361	148	509	592	598	621
South Dakota	769	223	992	1,130	1,112	1,017
Tennessee	585	260	845	923	919	924
Texas	4,703	1,914	6,617	6,740	6,581	6,404
Utah	355	129	484	481	456	479
Vermont	90	59	149	158	163	153
Virginia	687	388	1,075	1,237	1,267	1,272
Washington	1,587	632	2,219	2,260	2,219	2,173
West Virginia	336	171	507	602	609	615
Wisconsin	1,255	434	1,689	1,967	1,995	2,006
Wyoming	360	117	477	506	509	517
Total	59,297	24,315	83,612	89,420	87,762	87,128

U. S. Civil and Military Airports by Types

As of January 1, 1955

As reported by the Civil Aeronautics Administration

State	Total	Public	Limited†	Paved Airports Lighted	Paved Airports Not Lighted
Alabama	72	28	44	15	1
Arizona	162	43	119	14	2
Arkansas	82	40	42	15	2
California	465	205	260	78	47
Colorado	119	43	76	9	2
Connecticut	39	18	21	6	2
Delaware	21	9	12	2	2
Dist. of Columbia	1	1	..	1	..
Florida	144	84	60	35	22
Georgia	108	41	67	25	4
Idaho	159	31	128	10	2
Illinois	392	137	255	25	12
Indiana	135	86	49	16	3
Iowa	181	80	101	14	..
Kansas	238	85	153	24	4
Kentucky	49	19	30	8	5
Louisiana	100	30	70	14	3
Maine	112	22	90	12	2
Maryland	45	24	21	7	2
Massachusetts	82	50	32	17	6
Michigan	255	104	151	31	6
Minnesota	224	72	152	22	3
Mississippi	80	30	50	16	1
Missouri	114	52	62	17	6
Montana	168	55	113	15	2
Nebraska	202	74	128	16	5
Nevada	79	26	53	14	1
New Hampshire	34	14	20	7	..
New Jersey	89	49	40	10	3
New Mexico	101	35	66	17	3
New York	271	105	166	26	5
North Carolina	114	53	61	19	5
North Dakota	177	40	137	9	..
Ohio	252	125	127	17	7
Oklahoma	149	64	85	28	4
Oregon	138	46	92	18	6
Pennsylvania	263	140	123	22	9
Rhode Island	9	6	3	3	1
South Carolina	62	32	30	10	5
South Dakota	77	33	44	8	1
Tennessee	58	31	27	9	2
Texas	663	232	431	76	22
Utah	58	26	32	10	4
Vermont	25	8	17	3	..
Virginia	96	47	49	8	9
Washington	185	66	119	24	6
West Virginia	51	27	24	10	2
Wisconsin	199	85	114	17	3
Wyoming	78	30	48	11	..
Total	6,977	2,783	4,194	840	244

*—Definitions of airports are as follows: Public—all airports that serve scheduled and large irregular air carriers as regular, alternate and provisional stops; all C.A.A. intermediate landing fields; all airports having a true-light certificate to indicate a lighted airport, and all other airports which are operationally active. Limited—all airports that do not qualify as "Public-Use" airports.

†—Includes seaplane bases and heliports.

CAA Operated Traffic Control Towers Ranked in Order of Air Carrier Operations

As reported by the Civil Aeronautics Administration

C.A.A. Tower	Rank Order 1954	Rank Order 1953	Air Carrier Operations 1954	Air Carrier Operations 1953
Chicago, Ill. (Midway)	1	1	283,219	266,825
New York, N. Y. (LaGuardia)	2	2	188,604	188,839
Washington, D. C.	3	3	168,400	164,121
Los Angeles, Calif.	4	4	148,519	138,738
San Francisco, Calif.	5	5	131,138	115,891
Miami, Fla.	6	6	126,213	110,515
New York, N. Y. (Idlewild)	7	10	111,463	101,235
Dallas, Tex.	8	9	107,897	103,365
Cleveland, Ohio	9	8	106,677	107,007
Detroit, Mich. (Willow Run)	10	7	103,380	107,313
Atlanta, Ga.	11	13	99,834	95,204
Pittsburgh, Pa. (Greater)	12	11	98,772	99,698
Newark, N. J.	13	18	89,507	73,977
Philadelphia, Pa.	14	14	88,088	86,963
Kansas City, Mo.	15	16	85,185	84,010
Boston, Mass.	16	12	83,690	95,877
Oakland, Calif.	17	15	81,802	84,307
St. Louis, Mo.	18	17	80,486	79,991
Burbank, Calif.	19	19	67,163	66,559
Louisville, Ky. (Standiford)	20	22	66,526	61,884
Indianapolis, Ind.	21	21	62,539	62,844
Honolulu, T. H.	22	20	61,458	66,014
Denver, Colo.	23	26	60,664	55,569
Covington, Ky.	24	25	60,351	54,874

Scheduled Air Carrier Operation Statistics

As reported by the Civil Aeronautics Board

Number of Operators, Aircraft in Service, Route Mileage and Speed

	DOMESTIC LINES					INTERNATIONAL LINES				
	Operators	Aircraft in Service	Average Number of Seats	Route Mileage Operated	Average Speed (mph)	Operators	Aircraft in Service	Route Mileage Operated	Average Length of Pass. Trip	Average Speed (mph)
1940	19	369	16.54	42,757	N.A.	3	48	52,322	614	N.A.
1941	19	370	17.54	45,163	N.A.	3	82	N.A.	713	N.A.
1942	19	186	17.91	41,596	N.A.	3	68	N.A.	880	N.A.
1943	19	204	18.34	42,537	N.A.	3	70	27,211	874	N.A.
1944	19	288	19.05	47,384	155.6	3	70	29,708	910	149.2
1945	20	421	19.68	48,516	155.4	4	97	38,885	942	150.7
1946	24	674	25.25	53,981	160.2	9	147	66,419	1,057	166.3
1947	28	810	29.93	62,215	168.2	12	154	95,593	1,332	191.1
1948	31	878	32.37	68,702	171.9	13	175	105,853	1,376	198.5
1949	37	913	35.03	72,667	179.0	13	177	109,011	1,351	207.1
1950	38	960	37.47	77,440	181.2	12	160	106,401	1,316	218.4
1951	38	981	39.55	78,913	184.6	12	140	108,763	1,273	223.5
1952	35	1,078	42.71	77,894	190.8	13	149	110,465	1,277	226.8
1953	32	1,139	46.07	78,384	197.8	14	161	111,826	1,254	229.9
1954	32	1,175	50.06	78,294	205.8	15	161	112,488	1,314	242.1

N.A.—Not available.

Scheduled Air Carrier Operating Revenues—Domestic Lines

Year	Total Revenues	Passenger Dollars	% of Total	Mail Dollars	% of Total	Express & Freight Dollars	% of Total	Excess Baggage Dollars	% of Total	Other Dollars	% of Total
1940	$ 76,863,643	$ 53,308,172	69.4	$20,090,123	26.1	$ 2,077,726	2.7	$ 551,249	0.7	$ 836,373	1.1
1941	97,311,134	69,791,338	71.7	22,696,351	23.3	2,919,003	3.0	765,424	0.8	1,139,018	1.2
1942	108,248,830	74,819,050	69.1	23,470,088	21.7	6,977,943	6.4	1,259,774	1.2	1,721,975	1.6
1943	123,104,965	87,481,456	71.0	24,212,580	19.7	8,381,539	6.8	1,720,142	1.4	1,309,248	1.1
1944	160,928,192	116,440,690	72.3	33,317,366	20.7	8,306,288	5.2	2,030,444	1.3	833,404	0.5
1945	214,743,090	166,519,922	77.5	33,693,467	15.7	10,835,138	5.0	2,298,241	1.1	1,396,322	0.7
1946	316,232,793	275,593,712	87.2	20,981,542	6.6	13,620,295	4.3	2,992,795	0.9	3,044,449	1.0
1947	364,839,575	308,575,954	84.6	29,444,746	8.1	19,377,949	5.3	3,572,104	1.0	3,868,822	1.0
1948	434,295,383	343,289,730	79.0	59,309,343	13.7	24,372,395	5.6	3,953,310	0.9	3,370,605	0.8
1949	486,033,845	388,930,412	80.0	59,332,991	12.2	27,986,886	5.8	4,452,334	0.9	5,331,220	1.1
1950	557,162,340	443,852,000	79.7	63,772,233	11.4	35,109,399	6.3	5,068,238	0.9	9,360,461	1.1
1951	702,364,506	591,186,365	84.2	57,421,687	8.2	36,914,107	5.2	6,069,313	0.9	10,773,018	1.5
1952	817,680,000	695,456,000	85.1	58,887,000	7.2	42,828,000	5.2	7,348,000	0.9	13,152,000	1.6
1953	937,482,000	803,869,000	85.8	64,484,000	6.9	47,791,000	5.1	8,704,000	0.9	12,622,000	1.3
1954	1,042,793,000	905,840,000	86.9	65,726,000	6.3	49,901,000	4.8	10,632,000	1.0	10,680,000	1.0

Personnel Employed—Domestic Scheduled Air Carriers

	Pilots and Copilots	Other Flight Personnel	Pursers, Stewards, Stewardesses	Meteorologists and Dispatchers	Mechanics	Hanger and Field Personnel	Office Employees	All Other Personnel	Total Employees
1940	1,939	18	914	193	4,054	1,880	5,855	1,131	15,984
1941	2,217	19	1,028	220	4,423	2,224	7,807	1,285	19,223
1942	2,194	112	753	1,581	9,348	2,969	7,717	2,236	26,910
1943	2,125	8	845	1,685	8,271	3,356	10,973	2,391	29,654
1944	2,879	11	1,322	1,870	7,136	3,509	12,201	2,270	31,198
1945	4,967	108	2,075	2,613	10,844	7,012	19,241	3,453	50,313
1946	5,712	98	3,342	3,577	16,107	10,307	24,626	5,413	69,182
1947	5,034	181	3,061	2,618	15,366	8,409	22,012	2,317	58,998
1948	5,307	312	3,038	2,612	16,428	9,222	21,396	2,101	60,416
1949	5,257	642	3,199	2,497	15,674	9,336	21,136	2,145	59,886
1950	5,785	776	3,372	2,450	15,788	9,822	21,894	2,016	61,903
1951	6,688	1,012	4,106	2,617	18,908	11,475	25,770	2,322	72,898
1952	7,209	1,141	4,640	2,666	20,973	12,388	27,939	3,731	79,687
1953	7,726	1,365	4,954	2,665	20,717	14,249	30,193	2,782	84,651
1954	7,803	1,624	5,141	2,419	20,108	14,575	30,436	2,659	84,765

Personnel, Payroll and Average Salary—1954

Type of Employee	DOMESTIC LINES Personnel	Annual Payroll	Av. Annual Salary	INTERNATIONAL LINES Personnel	Annual Payroll	Av. Annual Salary
Pilots and Copilots	7,803	$88,548,918	$11,348	1,692	$22,094,877	$13,058
Other Flight Personnel	1,624	12,980,208	7,993	901	8,183,261	9,082
Stewards, Stewardesses, Pursers	5,141	16,661,937	3,241	1,222	5,312,730	4,348
Dispatchers, Comm. Operators, Meteorologists	2,419	12,211,089	5,048	912	3,487,164	3,822
Mechanics	20,108	108,973,113	5,420	5,065	23,799,350	4,699
Other Hangar and Field Personnel	14,575	64,968,623	4,458	3,280	10,196,044	3,109
Office Employees	30,436	128,327,733	4,217	10,235	37,458,531	3,660
All Other Employees	2,659	10,971,009	4,126	1,469	5,091,832	3,466
Total	84,765	$443,652,630	$5,233	24,776	$115,623,789	$4,667

1956 U.S. AND FOREIGN MILITARY AIRCRAFT

MAKE AND MODEL	POPULAR NAME	Type	Number of Crew	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	ENGINE: Total Take-off Thrust at Specified RPM	Fuel Capacity (Gallons)	Oil Capacity (Gallons)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Feet per Minute)	PERFORMANCE: Service Ceiling with Normal Load (Feet)
UNITED STATES																							
Aero Commander L-26B	Commander	Tr	1	Lyco GO-480-D1A	2	550	N	156	10	44′3¼″	35′5″	14′9″	242.5	20.5	4181	1819	6000		206–SL	190–10000	990	1400	21900
Beech 45	Mentor T-34A	T	2	Cont O-470-13	1	225–2600	N	50	3	32′10″	25′11″	9′7″	177.6	11.5	2170	730	2900		189–SL	173–10000	735	1230	20000
45	Mentor T-34B	T	2	Cont O-470-13A	1	225–2600	N	50	3	32′10″	25′11″	9′7″	177.6	11.5	2246	729	2975		189–SL	173–10000	735	1160	20000
50	Twin Bonanza L-23B	Tr	6	Lyco GO-435-C2	2	490–3400	N	134	6	45′3⅜″	31′8½″	11′4″	277.1	13.9	4015	1985	6000		178–2500	167–10000	835	1450	20000
Boeing KC-97G	Stratofreighter	TC,Ta,Am	5	P&W R-4360-59	4	14000	N	9190		141′3″	110′4″	38′3″			78000	96600	175000	55400	375–	300*–	4300*		35000*
B-47E	Stratojet	MB	3	GE J-47	6	N	36000			116′0″	107′0″	28′0″					200000	20000*	600*–		3000*		40000*
B-50D	Superfortress	MB	11	P&W R-4360-35	4	14000	N			141′3″	99′0″	32′9″					170000	28000	400*–	300*–	4000*		40000
B-52	Stratofortress	HB	8	P&W J-57	8	N	60000			185′0″	156′0″	48′0″					350000*		650*–				50000*
RB-47E	Stratojet	PRB	3	GE J-47	6	N	36000*			116′0″	109′10″	28′0″					200000		600*–		3000*		40000*
KC-135	Stratotanker	TT	2–3	P&W J-57	4	N	40000			130′0″	128′0″	38′3″					190000		550*–	550–	3000*		42000*
Cessna L-19A	Bird Dog	OR	1	Cont O-470-11	1	213–2600	N	42	2½	36′0″	25′0″	7′6″	174.0	18.3	1498	602	2100	465	116–5000	104–5000	530	1290	21200
OE-2	N			Cont O-470-2	1	265–2600	N	52	3	36′0″	25′2″	7′6″	174.0		1835	815	2650	473	161–10000	132–5000	500		22350
Chance Vought F7U-3	Cutlass	F	1	West J-46	2	N				39′8⅝″	44′3½″	14′7⅛″	540.0	74.4			23300		650*–			1300*	45000
F8U-1	Crusader	F	1	P&W J-57	1	N																	
Convair R3Y		Tr	7	All XT-40-A-10	4	22000	N			145′9″	139′8″	51′5″					160000		350*–				
F-102A		I	1	P&W J-57		N				38′2¼″	68′3¼″	18′2¼″											
XF2Y-1	Sea Dart	F	1	West J-46	2	N				34′0″	52′0″	12′0″											
XFY-1	Pogo Stick	F	1	All YT40-14	1	5850	N												500*–				
C-131D		Tr		P&W R-2800-CB-16	2	4800	N	1730		105′4″	79′2″	28′1¼″	920.0	43.8			47000		255–16000	247–20000	1570	1410	24500
R4Y-1		Tr		P&W R-2800-52W	1	2400	N	1730		105′4″	79′2″	28′2″	920.0	43.8	30684		47000		255–16000	234–16000	1575	1220	23400
TF-102A		Tr		P&W J-57-P-11		N																	
F-102A		I		P&W J-57-P-11	1	N				38′1¼″	68′3¼″	18′2″											
B-58		B																					
Douglas AD	Skyraiders	A	1–2–3	Wr R-3350-26W	1	2700	N			50′0″	38′10″	15′7″	400.0		10519	5546	16065						
F4D	Skyray	F	1	P&W J-57		N																	
A4D	Skyhawk	AB	1	Wr J-65	1	N																	
B-66		B	3	All J-71	2	N				72′6″	75′2″	23′7″					70000		600*–				
RB-66		RB	3	All J-71	2	N				72′6″	75′2″	23′7″					70000		600*–				
C-133		Tr		P&W T-34	4																		
Fairchild C-119G	Flying Boxcar	TC	5	Wr R-3350-85	2	7000–2900	N	2590	120	109′3″	86′6″	26′3″	1477.0	110.8	39920	34000	77000	29400	280–10000	200–10000	2080	1200	20600
C-123B	Provider	TC	2	P&W R-2800-99W	2	5000–2800	N	1514	96	110′0″	76′3″	34′2″	1223.2	83.3	31197	28803	60000	18653	252–13000	180–5000		1400	23000
Grumman SA-16A	Albatross	H,R,C,Tr,P	6	Wr R-1820-76A	2	2650–2700	N	675	58	80′0″	61′0″	24′3″	833.0		20100		27025		270–16800	225–	2700	1400	
F9F-8	Cougar	F	1	P&W J-48	1	N				34′6″	41′7″	12′3″							650*–				
S2F-1	Sub Killer	Sub,A	4	Wr R-1820	2	2750	N																
F11F-1	Tiger	F	1	Wr J-65-W-7	1	N				31′7″	40′10″	12′8″											
Lockheed T-33		T		All J-33	1	N		*683		39′0″	38′0″	12′0″	238.0				15000		600–				45000
C-121C, R7V-1	Super Constellation	TC		Wr R3350-34	4		N			123′0″	113′7″	23′0″	1650.0							330*–			
RC-121, WV-2	Super Constellation	Re		Wr R3350-34	4		N			123′0″	116′2″	27′0″	1650.0				145000		270*–				
C-130	Hercules	Tr		All T-56	4	N				132′0″	95′0″	38′0″					108000						
P2V-7	Neptune	Pt,M,TB		(a)	4		7800			103′0″	91′5″	29′4″	1000.0*		47450		75500		300–				22000
C-121F, R7V-2	Super Constellation	PCL		P&W T-34	4	22000		*6750		117′0″	116′2″	24′6″	1615.0	99.6			150000	38000		440–			35800
F-104		F																					
T2V-1		T		All J-33	1	N		760		42′0″	38′0″	13′0″					16400		600–		900		
Martin P5M-2	Marlin	AS	7	Wr R-3350-32W	2	6500*	N			118′0″	98′11″	33′0″	1406.0				70000*		250–		2500		
TM-61	Matador	PB	N	All J-33	1	N				28′7″	39′6″								650*–				35000*
B-57B		TaB	2	Wr J-65	2	N	14400*			64′0″	65′5″	16′0″					50000*		600*–		2000*		45000*
P6M-1	Sea Master	M	5	All J-71	4	N				100′0″	134′0″	31′0″	1900.0						600*–				
McDonnell F-101A	Voodoo	F	1	P&W J-57	2	N																	
RF-101A	Voodoo	RF	1																				
F3H-2N	Demon	NF	1	All J-71	1	N																	

	XP-67	Bomber Destroyer		1	Cont		2	2120–	N			55'0"	49'9"	15'9"					20000		405–			2385		37400
	FH-1	Phantom		1	West	19-XB	2	N	3200–			40'9½"	37'2½"	13'2"					10000		500–			1000+		
	F2H-1	Banshee	F	1	West	J-34	2	N	6000–			41'8"	39'0"	14'5"					14000		600–			1000+		40000+
	F2H-2	Banshee	F	1	West	J-34	2	N	6000–			44'11"	40'1"	14'5"					14000+		600–			1500+		40000+
	F2H-2N	Banshee	NF	1	West	J-34	2	N	6000–			44'11"	42'0"	14'5"					20000		600–			1500+		40000+
	F2H-2P	Banshee	P	1	West	J-34	2	N	6000–			44'11"	43'0"	14'5"					20000		600–			1500+		40000+
	F2H-3, F2H-4	Banshee		1	West	J-34	2	N	6000+–			44'11"	47'6"	14'5"					20000							
	XF-85	Goblin	F	1	West	J-34	1	N	3000–			21'0"	15'0"	8'0"					5600		600–					40000+
	XF-88A	Voodoo	FB	1	West	J-34	2	N				40'0"	55'0"	15'0"					20000+		700–					
	KDH-1	Katydid	PTD	N	Own		1	N																						
	RTV-2	Gargoyle	PB	N															1000											
	F3H-1N	Demon	F	1	West	J-40	1	N				35'4"	59'0"	14'4"																
	F-101	Voodoo	F		P&W	J-57	2	N	20000–			39'8⅓"	67'4½"	18'0"																
North American	F-86D	Sabre	I	1	GE	J-47	1	N	7650–			37'1"	41'8"	15'0"					18000		650+–			1000		45000+
	F-86F	Sabre	F	1	GE	J-47	1	N	5970–			37'0"	37'0"	14'0"					17000		650+–			1000		45000+
	F-86H	Sabre	FB	1	GE	J-73	1	N	9000–			37'1"	38'8"	15'0"							650+–			1200		4500+
	F-100A	Super Sabre	F	1	P&W	J-57-P7	1	N	10000–			38'0"	47'0"	15'0"							755–			1000		50000+
	T-28B		T	2	Wr	R-1820	1	1425–	N			40'6"	32'9"	12'6"				6000	8000		345–		310–30000	1060		37000
	F-86K	Sabre	F	1	GE	J-47-33	1	N	5600+–			37'1"	42'4"	15'0"					18500		650+–					45000+
	FJ-3	Fury	F	1	Wr	J-65	1	N	7200+–			37'1"	37'7"	13'8"					18000+		650+–					45000+
	FJ-4	Fury	F	1	Wr	J-65-W4	1	N	7800+–			39'1"	37'6"	12'8"					19000+		690+–					45000+
	F-100C	Super Sabre	F	1	P&W	J-57-P7	1	N	10000+–			38'0"	47'0"	15'0"							822+–			1000+		50000+
	T-28C	N	T	2	Wr	R-1820	1	1425–	N			40'6"	34'3"	12'6"					8247		346–			860		35000
Northrop	F-89D	Scorpion	I	2	All	J-38A-35	2	N				56'2"	53'4"	17'7"	606.0				40000+		600+–			1900+		45000+
	SM-62	Snark	PB	N																										
	F-89H, F-89J	Scorpion	I	2																										
Republic	F-84F	Thunderstreak	FB	1	Wr	J-65	1	N	7200–			33'6"	43'4"	14'4"					25000		650+–			2000+		45000+
	RF-84F	Thunderflash	RF	1	Wr	J-65	1	N	7200–			33'6"	47'6"	15'0"							650+–			2000+		45000+
AUSTRALIA																														
de Havilland	DH-115, Mk-33	Vampire	T	2	DH	Goblin 35	1	N	3500–10750	396	1½	38'0"	34'6"	6'3"	261.0	7.7			11150		549–20000	408–40000		850	4500	40000
BELGIUM																														
S.A.B.C.A.	*F, Mk-4	Hunter	F	1	RR	Avons	1	N				33'8⅛"	45'10⅓"	13'1⅓"	340.0															
GREAT BRITAIN																														
Auster	A.O.P. Mk-9		OL	2-3	Bl	Bombardier	1	180–	N	18	3	36'5"	23'8½"	8'11"	197.0				2100		127–1000	110–1000		245		
		Aiglet	T	2	DH	Gypsy Major	1	130–	N	16	3	32'0"	23'2½"	8'5"	169.5	18.0	1323	877	2200		132–1000	107–1000		270	650	12500
AVRO	698	Vulcan	B		Br	Olympus	4	N	44000–			99'0"	97'1"	26'8"												
	696	Shackleton	RB	10	RR	Griffon	4		N			120'6"	87'4"	23'4"												
Blackburn		Beverley	Tr	4	Br	Centaurus 173	4	11400–2800	N	8260	254	162'0"	99'5"	38'9"	2916.0	168.0	82100	52900	135000	45000	238–7500	223–5000		3700	760	15750
Bristol	170	Freighter	Tr		Br	Hercules 730	2	3960–	N	1744	70	108'0"	68'4"	21'6"	1487.0	54.3	27948	16054	44000	12997	193–10000	164–5000		2500	1400	22500
	171	Sycamore	H	1	Av	Leonides	1	520–	N	89	6	48'6¼"	61'0"	14'7"			3983	1417	5200		141–	90–		368	1300	15500
	173		H		Av	Leonides 73	2	1100–	N			48'6¼"	78'2"						10600		158–SL					
de Havilland	DH-115	Vampire	T	2	DH	Goblin 35	1	N	3500–10750	396	1½	38'0"	34'6"	6'3"	261.0	7.7			11150		549–20000	408–40000		850	4500	40000
	DH-112	Venom	FB	1	DH	Ghost	1	N	4850–10250			41'9"	31'10"	6'3"												
	DH-110		NF	2	RR	Avons	2	N				51'0"	52'1½"													
	DHC-1	Chipmunk	T	2	DH	Gypsy Major 8	1	145–2550	N	22	3	34'4"	25'5"	7'0"	172.5	13.9	1425		2100		138–SL	119–SL		275	840	15800
	DH-112	Venom, Sea Venom	NF	2	DH	Ghost	1	N	4850–10250			41'9"	35'3"													
English Electric	B-2	Canberra	MB	3	RR	Avons	2	N	13000–7900			64'0"	65'6"	15'7"												
	B-6	Canberra	B	3	RR	Avons	2	N	13000–7900			64'0"	65'6"	15'7"												
	B-8	Canberra	AB	2	RR	Avons	2	N	13000–7900			64'0"	65'8"	15'7"												
	PR-3, PR-7	Canberra	P	2	RR	Avons	2	N	13000–7900			64'0"	66'8"	15'7"												
	T-4	Canberra	T	3	RR	Avons	2	N	13000–7900			64'0"	65'6"	15'7"												
	P-1		F	1	ArS	Sapphire	2	N																		
	PR-9	Canberra	P	2	RR	Avons	2	N				66'0"	66'8"	15'7"												
Fairey	T-7, AS-7	Firefly	AS,T	3	RR	Griffon 5901	1	1965–	N			44'6"	38'3"		342.5		11016		13970			257–13500		660	1550	25500
	FD-1		Rs		RR	Derwent	1	N				19'6½"	26'3"													
	AS-1	Gannet	AS	3	ArS	Double Mamba 100	1	N	2950–			54'4"	43'0"											300+–			
	5	Firefly	AS,R	2	RR	Griffon 74	1	2020–	N			41'2"	37'11"		330.0		9948		13927		386–14000			760		33500
		Gyrodyne		2	Av	Leonides	2	1100–	N																	
	(Helicopter)	Rotodyne	H		Nap	Eland	2	N	3000–12500			90'0"							33000			130–		250		
	(Helicopter)		OC	2	Bl	Palouste	1	N				28'0"														
	FD-2		Rs		RR	Avons	1	N				28'10"	52'7½"													
Folland	FO-141	Gnat	F	1	Br	Orpheus	1	N	4850–			22'2"	30'0"	8'6"												
Gloster	GA-5	Javelin	F	2	ArS	Sapphire	2	N	16600–			52'0"	57'0"	16'0"												
Handley Page	HP-80	Victor	B		ArS	Sapphire	4	N				110'0"	114'11"	26'9"												

For abbreviations see page 243

For Directory of the Aircraft Manufacturers listed above, see page 286

U. S. AND FOREIGN MILITARY AIRCRAFT—*concluded*

MAKE AND MODEL	POPULAR NAME	Type	Number of Crew	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	ENGINE: Total Take-off Thrust at Specified RPM	Fuel Capacity (Gallons)	Oil Capacity (Gallons)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Feet per Minute)	PERFORMANCE: Service Ceiling with Normal Load (Feet)
Hawker	Sea Hawk	I		RR Nene 4	1	N	5000–16500			39'0"	40'0"	8'9"	278.0										
F-Mk. 1, 4, 6	Hunter	F	1	RR Avons	1	N				33'8½"	45'10½"	13'1½"	340.0										
F-Mk. 2, 5	Hunter	F	1	ArS Sapphire	1	N				33'8½"	45'10½"	13'1½"	340.0										
	Hunter	F	2	RR Avons	1	N				33'8½"	48'10½"	13'2½"											
Hunting Percival T-Mk. 1	Provost	T	2	Av Leonides	1	550–3000	N	78	6	35'2"	28'8"	8'10"	214.0	24.2	3311	989	4300		201–2300	177–11500	633	2100	22500
P-66	Pembroke	Tr	2	Av Leonides	2	1100–3000	N	286	25	64'6"	46'0"	16'1"	400.0	50.2			13000		220–1800	208–	1160	1500	22000
P-84	Jet Provost	T	2	ArS Viper V-5	1	N	1750–13400	205		35'5"	31'11"	10'2"					5850		267–30000		570	2530	
Saunders-Roe (Helicopter)																							
Mk. 6	Skeeter	H	1	DH Gypsy Major 200	1	200–2600	N	23		32'0"	28'5"	10'2"			1607	593	2200		106–	104–	237	1120	12300
Scottish Aviation																							
Twin Pioneer		Tr	1	Av Leonides 503/8	2	1100–3000	N	192	10¾	76'6"	45'1"	11'7"	670.0	44.0	9075	4425	13500	3006	180–1750	139–5000	565	980	23000
Pioneer 2		Tr		Av Leonides	1	550–3000	N	72	5½	49'9"	34'4"	10'1"	390.0	32.5			5400		173–				
Short																							
SB-6	Seamew	AS	2	ArS Mamba	1	N				55'0"	41'0"	13'5"											
Vickers-Armstrong Mk.-B-1	Valiant	MB		RR Avons	4	N																	
Mk.-FR-5	Supermarine Swift	FR	1	RR Avons	1	N				32'4"	41'6"	12'3"	320.2										
525	Supermarine	F	1	RR Avons	2	N																	
V-1000		Tr		RR Conway	4	N				140'0"	146'0"	38'6"											
Westland Mk.-4	Wyvern	F	1	ArS Python	1	N	3650–			44'0"	42'3"	15'9"											
S-51	Dragonfly	H	1	Av Leonides	1	550–	N	43		48'0"	45'0"	13'0"			4300	1170	5700	580	103–		308	970	12500
S-55	Whirlwind	H	2	Av Leonides Major	1	800–	N	145		53'0"	41'8½"	15'3"			5262	2738	8000	1462	110–		370	825	12500
(Helicopter)	Widgeon		1	Av Leonides 521/1	1	530–3000	N	83	6	49'0"	41'3"	12'11"			4424	1476	5900	606	96–SL	80–SL	300	970	10600
CANADA																							
de Havilland L-20A	Beaver	L	1	P&W R-985-AN6B	1	450–2300	N	95	6¼	48'0"	30'3"	9'0"	250.0	24.6	3272	1828	5100		163–5000	143–5000	650	1020	18000
DHC-3	Otter	C,L,Tr	1	P&W R-1340-S1H1-G	1	600–2250	N	216	2¾	58'0"	41'10"	12'7"	375.0	26.3	4692	3308	8000		160–5000	139–5000	1008	1000	19000
DENMARK																							
Skandinavisk Aero																							
KZ-10-AOP		OL	2	Cont C-145-2	1	145–2700	N	39½	7	30'10"	21'4"	6'11"	158.0	9.8	1156		1894		116–	100–	460	700	12800
FINLAND																							
Valmet Oy VH-II	Vihuri	T	2	Br Mercury 8	1	720–2600	N	168	10	34'1"	28'9"	12'8"	202.9	15.7	4700		5982		270–12000	204–3300	660	2263	29200
FRANCE																							
Breguet 1001	Taon	AF	1	Br Orpheus	1	N																	
765		Tr	2–3	P&W CB	4	9600–	N	4043		141'0"	94'9"	35'6"	1998.9		68301	45456	113757	37256	281–	230–	2295	1480	19100
1050		AS	3	RR Dart 7	1	1950–	N			52'0"	44'0"		400.0				18000						
1100	Taon	A	1	Sn Vesta	2	N																	
Deux Ponts		Tr		P&W R-2800-C	4	9600–2500	N			140'0"	95'0"		1997.0				113800	32000	250–	230–	2000		
940	Integral	TC		Tur	4	N				58'4"	40'0"						14300			240–			
Dassault II C	Mystere	I	1	Sn Atar 101D	1	N	6600–			45'8"	46'8"	16'8"			11515		15442		659–	528–		10150	59000
IV A	Mystere	I		HS Verdon	1	N	7700–			43'8"	50'6"	17'4"			12518		16314		746–	597–		10620	64900
MD-550	Delta	I	1	Own MD 30 Viper	2	N	3520–																
SMB-2	Super Mystere	F	1	Sn Atar 101G1T1Y1	1	N	9960–	570		34'5"	46'0"	15'4"	372.5	32.0	15100		19750		750–SL	600–40000		17000	45000
XXVI	Mystere	F	1	Br Orpheus	1	N	4850–	440		27'0"	39'0"	12'0"	226.0		7250		10700		–36000				
Fouga CM 170 R	Magister	T	2	Tur Marbore II	2	N	1760–	192		37'0"	33'0"	9'0"	186.0		4268	1660	7055		444–30000	395–30000		2925	34000
Holste MH-1521	Broussard	L,Tr,P		P&W R-985	1	450–	N			45'0"	28'2"		271.0		3263		5511		168–	143–	745		
Leduc O21		I		Own Tuyere	1	N	20000–			45'6"	49'2"								671–		1243	7874	
Morane-Saulnier MS-733	Alcyon	T	3	Pot 6D-02-A	1	240–2350	N	65	3¼	37'0"	31'1½"	11'4"	235.0	21.8	2810	990	3800		162–SL	130–3300	570	730	15000
MS-735		T	3	Pot 6-D-30	1	310–2400	N	65	3¼	37'0"	31'1½"	11'4"	235.0	21.8	2840	1005	3845		175–5900	152–6600	600	830	19000
MS-755	Fleuret	T	2	Cont Marbore II	2	N	1764–22800	180	5½	31'4"	31'10"	9'0"	194.0	24.8	4300	1650	5850		440–19700	285–23000	470	3350	38000
MS-760	Paris	L,T	1	Cont Marbore II	2	N	1760–22800	360	5¼	31'4"	32'11"	9'0"	194.0	21.0	4190	3210	7500		405–20000	345–23000	930	2300	34000
MS-475		T	2	HS	1	860–	N			41'11"	35'6"	14'2"	186.0	15.2	5161		6680		310–13000	260–13000	600	2120	33400
MS-500	Criquet	OL,Am		Ar AS-10	1	240–	N	89	4¼	46'9"	31'9"	12'6"			2264		3276		92–SL	76–	435		

Potez	75	Blinde	A,O	2	Own	8D32	1	480		N			51'5"	36'0"	10'6"			4078	1653	5137		171	143	435	1898	
S.I.P.A.	S-300		T	2	Tur	Palas	1	N	353-34000	58	1½	31'6"	26'5"	10'0"	105.0	7.0	1155	785	1940		224-SL	194-SL	435	1335	19800
	S-121		T	2	Sn	12S	1	580	N			43'4"	36'7"	9'6"			4107		5126		233	199		1770	31500
	S-200	Minijet	T	2	Tur	Palas	1	N	353	58		31'4"	20'1"	7'0"	105.0		1063		1808		248	117	340	1000	31500
S.N.C.A.N.	2501	Noratlas	Tr	3	Sn	Hercules	2	4080	13400	1348	75½	106'7"	72'0"	19'9"	1088.9	42.8	27200	18300	45500	14800	248-10000	202-29500	1550	1180	23600
	NC-856	Norvigie	AO	1-2	Sn	Regnier 4L00	1	140	N	29	7½	47'4"	30'4"	8'8"	181.0	17.3	1433	880	1984	710	118	105	1243	1181	19600
	CT-10		PTD	N			1	N	200			14'2"	18'6"	5'2"	40.0				1410		280-1312		30	146	19865
	CT-20		PTD	N		Marbore	1	N	880			11'1"	17'7"						1444		559-32800			6560	45932
	1402	Gerfaut	I	1	Sn	Atar D2	1	N	6173			29'5"	38'8"						10141		694			315	
S.N.C.A.S.E.		Aquilon	F	1-2	DH	Ghost	1	N	4850			42'9"	36'9"	8'10"	280.0		10400	4500	14900		600		1040		40000
	SE-5000	Baroudeur	A	1	Sn	Atar	1	N	6200	462		32'10"	44'3"	11'10"	272.0		10300		15100		680			7380	49000
(Helicopter)	SE-3130	Alouette II	H	1	Tur	Artouste II	1	400-33000	N			33'0"	31'9"	9'0"			1700	1300	3000		113-SL	106	320	1180	14800
	S-55	Elephant Joyeux Durandal	H	2	P&W	R-1340	1	600-2250	N	185		53'0"	42'0"	13'11"			4785	2050	6835		105-SL	90	450	845	11850
			I																										
S.N.C.A.S.O.	SO-4050	Vautour	A,FB,Re	1-2	Sn	Atar 101-E2	2	N				50'0"	50'0"						88194		663*	680	3700*	2362	49200
(Helicopter)	SO-1221	Djinn		1	Tur	Palouste	1	N		66		36'0"	17'5"	8'7"	1012.0		730	950	1680	820	80	62	126	300	12000
	SO-9050	Trident	I		ArS	Viper MD30	2	N	3300			29'5"	51'1"													
ITALY																													
Aer Macchi	MB 323		T	2	P&W	R-1340	1	610-2250	N	108	9¼	39'4½"	30'0"	13'3"	217.0	23.0	4409	1301	5710		210-5900	173-13100	1180	1437	21325
	MB-326		T	2	ArS	Viper AS-V5	1	N	1640-13400	200	2½	31'6"	33'0"	5'4"	197.3	13.2	3803	1929	5732		449-29527	329-29527	632	3051	32808
Ambrosini	S-7		T	1-2	AR	115	1	225	N	42		28'6"	26'10"		136.8		2238	794	3031		217	193	621		17060
	S-7		T	1-2	DH	Gypsy Queen 30	1	250	N	53		28'6"	26'11"		136.8		2238	794	3031		230	205	621		18701
	Super 7	Supersette	T	2	DH	Gypsy Queen 70	1	550	N	55		30'5"			148.5		3030	1270	4300		254-SL	175	685	985	23000
	Super 7	Supersette	T	2	AR	121RC	1		N	55		30'5"			136.8		3030	1270	4300		260				29000
Fiat	G-46-2B		T	2	DH	Gypsy Queen 30	1	245-2500	N	42	7½	34'1½"	27'10"	7'10½"	172.2	11.0	2450	700	3150		204-SL	171-10000	700	1060	20000
	G-46 4B		T	2	AR	115 ter Mk-1950	1	222-2400	N	42	7½	34'1½"	27'10"	7'10½"	172.2	11.0	2425	720	3145		194-SL	164-4300	560	1025	17500
	G-59 4A		T	1	RR	T-24-2 Merlin	1	1400-3000	N	127	9½	38'10½"	31'1"	12'1"	227.0	14.3	6180	1450	7630		380-21000	303-18500	620	3500	39700
	G-59 4B		T	2	RR	T-24-2 Merlin	1	1400-3000	N	100	9½	38'10½"	31'1"	12'1"	227.0	14.3	6285	1180	7465		380-21000	303-18500	500	3500	39700
	F 86-K		F	1	GE	7E-TG-190-D17	1	N	7350			37'2"	40'11"	15'0"	287.9				18000		650		500		45000+
	Mk-52	Vampire	F	1	DH	Goblin 3	1	N	3300	395		38'0"	30'9"	6'2"	270.0		6835	3815	10650		480-15000		750		45600
	G 49-1		T	2	Av Leonides	502/4 Mk24	1	570-3000	N	90		40'11"	31'5"	9'1"	255.0		4700	1255	5955		225-3300	185-13100	1500	1050	24000
	G 49 2		T	2	P&W	R-1340-S3H1	1	600-2250	N	90		40'11"	30'10"	9'0"	255.0		4700	1255	5955		230-5000	185-13100	1300	1300	24000
	G 49 3		T	2	IA	19E1 Indio	1	620-2250	N	90		40'11"	30'10"	8'9"	255.0		4665	1255	5920		230-5000	185-13100	1370	1300	24000
	G 80 3B		T	2	DH	Goblin 35	1	N	3500-10750	405		36'1"	42'5"	13'2½"	270.6	14.3	9500	3300	12800		515-10000	342-30000	620	2420	36000
	G 82		T	2	RR	Nene RN 2/21	1	N	5400-12700	625[A]		38'9½"	42'5"	13'4½"	270.6		9700	4080	15430		575-10000	360-30000	1000[A]	6100	42650
	G 91		F	1	Br	Orpheus	1	N																					
Piaggio	P-148 MT		T	2	Lyco	O-435-A	1	190-2550	N	45	3	36'5"	27'7"	7'10"	200.0	16.4	1931	715	2646		174-SL	127-3000	570	900	18045
	P-150		T	2	P&W	R-1340-53H1	1	600-2250	N	148	14½	42'4"	30'4¼"	9'2½"	271.3	22.0	4277	1323	5600		228-5900	190-9700	690	1380	22100
	P-149-D		T,L	1	Lyco	GO-480-B	1	270-3400	N	63	¾	38'6"	28'2"	9'7"	203.0	16.4	2530	1100	3630	700	190-SL	160-6500	620	1400	20600
SPAIN																													
A.I.S.A.	AVD-12		L,Re,Am	3	Enm	Tigre G-IV B	1	150-2300	N	26	2½	36'5"	25'5"	6'10"	193.8	22.9	1433	882	2315	N	140-SL	113-SL	466	1080	16300
	1-115		T	2	Enm	Tigre G IV B	1	150-2300	N	35	2½	31'3"	24'1"	9'0"	150.7	12.8	1500	683	2183	N	142-SL	121-SL	500	731	14000
SWEDEN																													
SAAB	J29B		F	1	DH	Ghost 50	1	N	5000-10250			36'1"	33'2½"	12'3½"	258.0						660				
	A29		A	1	DH	Ghost 50	1	N	5000-10250			36'1"	33'2½"	12'3½"	258.0						660				
	S29C		P	1	DH	Ghost 50	1	N	5000-10250			36'1"	33'2½"	12'3½"	258.0						660				
	J29F		F	1	DH	Ghost 50	1	N				36'1"	33'2½"	12'3½"	258.0										
	91B	Safir	T	1	Lyco	O-435-A	1	190-2550	N	46	3	34'9"	26'0"	7'2"	146.0		1580	990	2570		170-SL	169-5000	700	880	19200
	91C	Safir	T	1	Lyco	O-435-A	1	190-2550	N	46	3	34'9"	26'0"	7'2"	146.0	17.7	1580	730	2310		173-SL	171-5000	710	1040	21800
	32	Lansen	A,F,Re,T	2	RR	Avon RA-7	1	N	9500			42'8"	49'2"	15'3"					22000		700+				
	210	Draken	Re	1	ArS	Adder	1	N	1050-15000																
	35	Dragen	F	1	RR	Avon	1	N																	

ABBREVIATIONS

+—Plus.
*—With wing tip tanks.
•—Includes aileron.
●—Built under license from Hawker.
(a)—Two Wright R-3350-32W and two Westinghouse J-34 engines.

A—Attack.
AB—Attack bomber.
AF—Attack fighter.
All—Allison Div.
Am—Ambulance.
AO—Artillery observation.
Ar—Argus.
AR—Alfa Romeo.
ArS—Armstrong-Siddeley Motors, Ltd.
AS—Anti-submarine.
Av—Alvis, Ltd.
B—Bomber.
Bl—Blackburn and General Aircraft, Ltd.
Br—Bristol Aeroplane Co., Ltd.
C—Cargo.
Cont—Continental Motors Corp.
DH—de Havilland Aircraft Co., Ltd.
Enm—Enmasa.
F—Fighter.
FB—Fighter bomber.
FR—Fighter reconnaissance.
GE—General Electric Co.
H—Hospital.
HB—Heavy bomber.
HS—Hispano-Suiza.
I—Intereceptor.
IA—Instituto Aeronautico I Ae.
L—Liaison.
Lyco—Lycoming-Spencer Div.
M—Mine layer.
MB—Medium bomber.
N—No or none.
Nap—Napier.
NF—Night fighter.
O—Observation.
OC—Observation and communication.
OL—Observation and liaison.
OR—Observation and reconnaissance.
P—Photographic.
PB—Pilotless bomber.
PCL—Passenger, cargo or litter.
Pot—Potez.
PRB—Photo-reconnaissance bomber.
Pt—Patrol.
PTD—Pilotless target drone.
P&W—Pratt and Whitney Aircraft Div.
R—Rescue.
RB—Reconnaissance bomber.
Re—Reconnaissance.
RF—Reconnaissance fighter.
RR—Rolls Royce, Ltd.
Rs—Research.
SL—Sea level.
Sn—S.N.E.C.M.A.
Sub—Submarine search.
T—Trainer.
Ta—Tanker.
TaB—Tactical bomber.
TB—Torpedo bomber.
TC—Troop and cargo transport.
Tr—Transport.
TT—Tanker transport.
Tur—Turbomeca.
West—Westinghouse Electric Corp.
Wr—Wright Aeronautical Corp.

For Directory of the Aircraft Manufacturers listed above, see page 286

1956 U.S. AND FOREIGN CIVIL AIRCRAFT

MAKE AND MODEL	Type	A. T. C. Number	Number of Crew	Number of Seated Passengers	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	Fuel Capacity (Gal.)	Oil Capacity (Gal.)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Ft. per Min.)	PERFORMANCE: Service Ceiling with Normal Load (Ft.)	PERFORMANCE: Fuel Consumption at Cruising Speed (Lb. per Hr.)
UNITED STATES																								
Aero Commander 560A	PC-L	6A1	1	4-6	Lyco GO-480-D1A	2	550–	156	10	44′3¼″	35′5″	14′9″	242.5	20.5	4181	1819	6000		206-SL	190-10000	980	1400	21900	180.0
680 Super	PC-L	2A4	1	4-6	Lyco GSO-480-A1A-6	2	680–	223	10	44′3¼″	35′5″	14′9″	242.5	20.5	4340	2660	7000		260-10000	230-10000	1380	1600	24200	230.0
Bee Aviation Honey Bee	P-L	4A11	1	N	Cont A-65	1	65–	8½	1	28′0″	18′0″	7′8″	96.0	5.4	610	250	860	200	120–	110–	240	1000	15000	24.0
Wee Bee	P-L	X	1	N	Kie O-45-35	1	30–	2½		18′0″	15′0″	3′0″	44.0	2.2	210	210	410	200	82–	72–	50	300	9000	20.0
Queen Bee	P-L		1	3	Lyco O-320	1	150–	36	1	32′10″	22′1″	8′0″	130.0	5.8	1190	960	2150	840	170–	160–	700	1000	18000	48.0
Beech C-50	PC-L	5A4	1	5	Lyco GO-480-F8	2	550-3400	134	6	45′3″	31′6″	11′4″	277.0	13.9	3928	2072	6000		210-2500	200‡-10000	1100	1450	20000	156.0
F-35	P-L	A-777	1	3	Cont E-185-11	1	205-2600	39	2½	32′10″	25′2″	6′6½″	177.6	11.5	1675	1050	2725		190-SL	180-6000	775	1100	18000	57.2
F-35	P-L	A-777	1	3	Cont E-225-8	1	225-2650	39	2½	32′10″	25′2″	6′6½″	177.6	11.5	1675	1050	2725		194-SL	184-8000	775	1300	19000	57.2
E-18S	PC-L	A-765	1-2	8	P&W R-985AN/14B	2	900-2300	286	17	49′8″	35′2½″	9′6″	361.0	17.5	6050	3250	9300		234-3300	215-10000	1480	1490	25700	278.0
Bellanca 14-13-3	P-L	773	1	3	Frank 6A4-150-B3	1	150-2600	40	3	34′2″	21′4″	6′2″	161.5		1250	900	2150		170-SL	150-SL	725		22000	
14-19	P-L	1A3	1	3	Lyco O-435-A	1	190-2550	54½	3	34′2″	23′0″	6′2″	161.5		1563	1037	2600		187-SL	180-8000	900	1400	22500	
31-42	PC-LS	576	2	6	P&W R-985	1	450-2300	200	12½	50′6″	27′11″	8′6″	335.0		2954	2650	5604		270-SL	150-SL	1360	900	20000	
Boeing Stratocruiser	P-L	812	5-7	80	P&W R-4360	4	14000-2700	7790	200	141′3″	110′4″	38′3″	1769.0		83500	62300	145800	31000	375-25000	320-25000	3000	1100	33000	
707-120	PC-L		3	109-125	P&W JT3C-4	4	40000*‡	17400		130′10″	134′6″	38′3″	2433.0				250000			591–	3000‡		40000‡	
707-220	PC-L			109-125	P&W JT4A	4		18078		130′10″	134′6″	38′3″	2433.0				250000	31000		605–			40000‡	
707-320	PC-L			122-147	P&W JT4A	4		23580		141′6″	146′8″	38′11″	2908.0				280000	38000		600–			40000‡	
Call Air A-4 "150"	PC-L	A-758	1	2	Lyco O-320	1	150-2700	25	2	36′0″	23′0″	7′0″	181.0	10.7	1000	550	1550	350	120–	110–	350	1000	18000	48.0
A-4 Modified	DS-L	A-758	1	N	Lyco	1	150-2700	25	2	33′6″	23′0″	7′0″	181.0	10.7	950	1200	2150	850	105–	100–	300	1000	15000	48.0
S-1B1	PC-L	A-754	1	1	Lyco O-320	1	150-2700	40	2	35′6″	23′6″	7′3½″	176.0	19.4	1000	650	1650	395	125-7000	113-7000	585	500	18000	48.0
Cessna 170	PC-LS	A-799			Cont O-300-A	1	145–	42	2	36′0″	25′0″	8′7″	175.0		1245	955	2200	655	140-SL	120-SL			15500	
172	L	3A12			Cont O-300-A	1	145–	42	2	36′0″	25′0″	8′6″	175.0		1260	940	2200	640	135-SL	120‡-SL		660	14300	
180	PC-LS	5A6			Cont O-470-J	1	225-2500	60	3	36′0″	26′0″	7′6″	175.0		1480	1090	2550	711	165‡-SL	150‡-SL			19800	
310	PC-L	3A10			Cont O-470-B	1	240-2600	100	6	36′0″	27′0″	10′6″			2850	1750	4600		220‡-SL	205-8000	1000		20000	
Colonial C-1	ET-LS	1A13	1	2	Lyco O-320	1	150-2700	40	2	34′0″	23′6″	8′10″	151.0	10.7	1450	700	2150		130-10000	115-5000	600	800	14000	48.0
Convair 440					P&W R-2800-CB-17		2500–	1730		105′4″	79′2″	28′1½″	920.0	43.6	31305		49100			289–	2450	1230	25000	
Douglas DC6A-1135A	C-L	6A3	3	N	P&W R-2800-CB-17	4	10000-2800	5512	166	117′6″	105′7″	28′8″	1463.0	85.1	51584	55416	107000	30010	368-19700	315-22400	4100	1000	26000	2545.0
DC6B-1198A	PC-L	6A4	5	52-102	P&W R-2800-CB-16	4	9600-2800	3992	166	117′6″	105′7″	28′8″	1463.0	85.1	56357	44643	100000	23490	360-18100	315-22400	2960	1040	26000	2545.0
DC6B-1228A	PC-L	6A4	7	52-85	P&W R-2800-CB-17	4	10000-2800	5512	166	117′6″	105′7″	28′8″	1463.0	85.1	58340	48660	107000	22953	368-19700	315-22400	4100	1000	26000	2545.0
DC-7	P-L	4A10	3-5	65-95	Wr 3350-972TC18DA2	4	13000-2900	5512	184	117′6″	108′11″	28′7″	1463.0	89.0	65900	56400	122200	19300	410-22200	370-24500	3750	1150	28200	2900.0
DC-7B	PC-L	4A10	5-9	80-96	Wr 972TC18DA4	4	13000-2900	6490	197	117′6″	108′11″	28′7″	1463.0	89.0	68073	57927	126000	22650	406-22100	361-24300	4650	1135	23900	2355.0
DC-7C	PC-L	4A10	5-9	65-99	Wr 988TC18EA1	4	13600-2900	7860	220	127′6″	112′3″	30′9″	1637.0	93.4	72643	66357	139000	21350	406-22700	259-24400	5470	1050	22800	2955.0
Fletcher FU-24	AU-L	4A12	1	N	Cont O-470-E	1	225–	44	3	42′0″	31′10″	9′4″	294.0	19.6	1870	1610	3500	1300	131-SL	111-SL	420	650	13500	68.4
Helio Courier	P-L	1A8	1	3	Lyco GO-435-C2B	1	260–	60	2½	39′0″	30′0″	8′9½″	231.0		1900	900	2800			157-8500	600	1150	25600	89.0
Lockheed 1049D-55	C-L		3	N	Wr 972C18DA1	4	13000-2900	6550	223	123′0″	113′7″	24′9″	1650.0	99.6	66026	67000	133000	36230	375-20000	335-20000	4600	1125	27900	3050.0
1049E-55	P-L		11	63	Wr 972C18DA1	4	13000-2900	6550	223	123′0″	113′7″	24′9″	1650.0	99.6	69700	60900	133000	19400	364-20000	305-20000	4300	1125	24100	3050.0
1049G	P-L		3-11	47-99	Wr 3250HPHDA3	4	13000–	7750		123′0″	113′8½″	24′9″	1654.0	99.6	73016	64484	137500		370–	335–	5840	1600	30100	
188	P-L		2-3‡	72-91	All 501-D13	4	15000–	5280	NA	99′0″	104′2″	32′3″	1300.0		54000		110000	20800	452–	410–	3000	3000	30000	
1049H	PC-L		3-9	83	Wr R-3350-DA3	4	13000–	7750†		123′0″	116′0″	24′9″	1654.0	99.6	70400	67100	137500	39000	370–	335–	2500	1600	30100	
1649A	P-L		3-4‡	48-93	Wr R-3350-EA2	4	13600–	9600	NA	150′0″	116′2″	24′9″	1850.0	NA	85553	71775	156000	23700	375–	350–	6400	1660	29700	NA
Mooney M-18C	P-L	803	1	N	Cont A65-8	1	65-2300	13½	1	28′10″	17′8″	6′3″	95.0	6.6	540	310	850		142-SL	130-10000	420^	1100	21000	21.0
Mark 20	P-L	2A3	1	3	Lyco O-320	1	170-2700	50	2	35′0″	22′6″	8′3½″	166.9	13.1	1325	1125	2450	630	170-SL	165-4900	900	900	22000	55.0
Piper PA-18-95	P-L	1A2	1	1	Cont C-90	1	90-2475	18	1¼	35′3″	22′4″	6′8″	178.5	18.8	800	700	1500	400	112-SL	100-SL	360	710	15750	30.0
PA-18-150	P-L	1A2	1	1	Lyco O-320	1	150-2700	36	2	35′3″	22′6″	8′7″	178.5	18.8	930	740	1750	505	128-SL	113-SL	500	1050	20500	48.2
PA-23	P-L	1A10	1	3	Lyco O-320	2	300-2700	72	4	37′0″	27′1″	9′5″	204.0	16.7	2160	1340	3500	835	182-SL	167-SL	720	1350	21000	48.0
PA-22-150	P-LS	1A6	1	3	Lyco O-320	1	150-2700	36	2	29′3″	20′6″	8′4″	147.5	13.2	1100	900	2000	485	139-SL	123-SL	570	620	15000	48.2

Stits	SA6A	P-L	Pend	1	1	Cont	C-85-12	1	87-2550	13	1¼	26'0"	17'6"	6'0"	130.0	12.0	566	360	1000	190	135-5000	120-5000	250‡	1000‡	12000‡	27.0
Taylorcraft	20	PC-L	3A3	1	3	Cont	O-470-J	1	225-2550	66	3	34'8"	24'4"	7'1 11/16"	178.5	14.4	1625	1125	2750	589	160-2500	150-2500	675	1000	15000	84.0
	20AG	AU-L	3A3	1-2		Cont	O-470-J	1	225-2550	44	3	34'8"	24'4"	7'1 11/16"	178.5	14.4	1550	1125	3767	691	115-SL	100-SL	325	1000	15000	84.0
Temco	D-16A	P-L	Pend	1	3	Lyco	O-340-A	2	340-2700	146	4	33'4 1/2"	27'2"	9'6 1/2"	178.3	9.6	2350	1250	3600	614	180-SL	170-7000	1200	1400	20000	54.0
BELGIUM																													
Avions Fairey	Tipsy Junior	P-L		1	N	Cont	A-65	1	65-2300	11 3/4	7/8	23'1"	18'9 1/4"	4'5"	114.0	13.8	472	330	772		108-SL	87-SL	328	787	14800	19.0
	Tipsy Belfair	P-L		1	1	WM	11	1	62-2800	16	2	31'0"	21'7"	5'6"	129.0	13.6	606	496	1102		115-SL	93-SL	455	492	16400	19.0
GREAT BRITAIN																													
Auster	Aiglet	P-L		1	2	DH	Gypsy Major Mk-1	1	130-2350	18	4	36'0"	23'8"	8'5"	184.5	18.0	1215	785	2000		126-1000	105-1000	245	710	15000	46.8
	Autocar	P-L		1	3	DH	Gypsy Major Mk-1	1	130-2350	38	4	36'0"	23'2"	8'3"	184.5	18.0	1413	987	2400	570	117-1000	100-1000	500	525	11000	46.8
	J-5-F	TP-L		2	2	DH	Gypsy Major 1	1	130-2350	19	3½	32'0"	22'2"		169.5	7.9	1323	877	2200		132-1000	112-1000	270	1200	16000	
	J-5-P	P-L		1	3	DH	Gypsy Major 10	1	145-	38	4	36'0"	23'2"	8'5"	189.5	18.0		650			125-1000	111-1000	425	620	13500	
Blackburn	Universal	PC-L		2-4	200‡	Br	Centaurus 873	4	12600-2800	4300	140	162'0"	99'5"	38'9"	2918.0	168.0	81740	61260	143000	50000	242-3600	230-6000	1730	760	15750	2800.0
Bristol	Britainia 100	P-L		9	92	Br	Proteus 705	4	15120-	8010	53	142'3 1/2"	114'0"	36'8"	2075.0	140.0	84000	68000	150000	25000	371-	340-	3520	1500	30000	4150.0
	Britainia 300	P-L		9	101	Br	Proteus 755	4	16480-	8010	53	142'3 1/2"	124'4"	36'8"	2075.0	140.0	85000	70000	155000	30000	406-	357-	3520	1720	32000	4700.0
	Britainia 300LR	P-L		9	93	Br	Proteus 755	4	16480-	10190	53	142'3 1/2"	124'4"	36'8"	2075.0	140.0	83250	66750	170000	28000	403-	357-	4940	1500	31000	4800.0
	Britainia 250LR	PC-L		9	84	Br	Proteus 755	4	16480-	10190	53	142'3 1/2"	124'4"	36'8"	2075.0	140.0	84850	85150	170000	31000	401-	357-	4464	1500	30500	4800.0
	170 Mk. 31	PC-L		3	50	Br	Hercules 730	2	3960-	1744	70	108'0"	68'4"	21'6"	1487.0	54.3	27946	16054	44000	12997	193-10000	164-5000	2500	1400	22500	798.0
	171 Mk. 4	H		1	4-5	Av	Leonides	1	520-		89	6	48'7"	46'2"	14'7"	1860.0		3983	1417	5400		126-	90-	368	1300	15500	158.0
de Havilland	Heron Series 2	PE-L		1-2	8-17	DH	Gipsy Queen 30 Mk. 2	4	1000-2500	380	43	71'6"	48'6"	15'7"	499.0		8019		13000	3054		183-8000	640	930	18000	
	Comet 2	P-L		4	44	RR	Avons	4	29400*-	8408		115'0"	96'0"	28'4 1/2"	2015.0				120000	13000		480-40000	2200			
	Dove Series 5 & 6	PE-L			6-11	DH	Gipsy Queen 70 Mk. 2	2	760-3000	156	11¼	57'0"	39'3"	13'4"	335.0		5678		8800	1672		179-8000	565	920	19400	
	Chipmunk	T-L		2	N	DH	Gipsy Major 10 Mk. 2	1	145-2550	29	3	34'4"	25'5"	7'0"	172.5	13.9	1430		2100		138-SL	119-SL	380	840	15800	
	DH-106	P-L		4	58-75	RR	Avon RA-29	4	42000*-	10408		115'0"	111'6"	28'6"	2121.0				152500	19300		500-40000	2945			
Handley Page	Herald	PC-L		2	36-44	Av	Leonides Major	4	3480-3000	1000	40	95'0"	70'3"	22'6"	882.0	60.0	20322	13678	34000	10705	255-8300	231-13500	2175	1820	23000	695.0
Hunting Percival	Prince Series V	PCS-L		1-2	8-12	Av	Leonides 503-4	2	1100-3000	238	14	64'6"	46'4"	16'1"	400.0	50.2			13500		220-1800	167-8000	1110		21500	242.0
	Provost	T-L		2	N	Av	Leonides Mk. 2500	1	550-	72	6	35'2"	29'0"	8'10"					4250		200-2500	177-11500	633	2100	22500	
Saunders-Roe	Skeeter Mk. 6	H		1	1	DH	Gypsy Major 20	1	200-2500	23		32'0"	28'5"	10'2"			1607	593	2200		108-	104-	237	1120	12300	
Scottish Aviation	Pioneer	PC-L		1	4-5	Av	Leonides 502/4	1	550-3000	72	5½	49'9"	34'4"	10'1"	390.0	32.5	4013	1787	5800	1145	162-1750	120-5000	427	1148	23000	115.0
	Pioneer	PC-S		1	4	Av	Leonides 502/4	1	550-3000	72	5½	49'9"	34'7"	10'1"	390.0	32.5	4258	1541	5800	899	153-2000	110-5000	426	1100	20000	108.0
	Pioneer	PC-L		1	4	P&W	Wasp Jr.	1	450-2300	72	5½	49'9"	34'7"	10'1"	390.0	32.5	3782	1518	5300	876	151-3500	120-5000	416	935	18000	120.0
	Twin Pioneer	PC-L		1	16	Av	Leonides 503/8	2	1100-3000	192	10¾	76'6"	45'1"	11'7"	670.0	44.0	9075	4425	13500	3008	180-1750	139-5000	565	800	23000	266.0
Short	Sealand SS1	P-LS		1	5-8	DH	Gypsy Queen 70	2	680-2800	173	14	59'0"	42'2"	14'0"	358.6	19.1	7259	1841	9100	935	200-5000	127-8000	495	780	20800	144.0
Vickers-Armstrong	700	P-L	VC-2	3-5	40-59	RR	Dart 506	4	(a)	2350	18	94'0"	81'2"	26'9"	963.0	71.8	34360	22800	58500	13450	340-20000	320-20000	2070	1220	27500	2550.0
	700D	PC-L	N	3-5	40-59	RR	Dart 510	4	(b)	2350	18	93'8 1/2"	81'2"	26'9"	963.0	71.8	35100	23560	60000	12700	340-20000	320-20000	2070	1280	27500	2550.0
	800	PC-L	N	3-5	53-70	RR	Dart 510	4	(b)	2350	18	93'8 1/2"	85'0"	26'9"	963.0	71.8	37800	22730	62000	13880	330-20000	318-20000	2050	1230	25000	2460.0
Westland	Dragonfly	H		1	3	Av	Leonides 521/1	1	530-3000	83		49'0"	45'0"	13'0"			4300	1170	5700	580	103-	86-5000	308		13000	175.0
	Whirlwind	H		2	8-10	P&W	R-1340	1	600-2250	145		53'0"	42'2"	15'3"			4990	2510	7500	1220	110-	85-5000	282		7000	330.0
	Widgeon	H		1	4	Av	Leonides 521/1	1	530-3000	83	6	49'0"	41'3"	12'11"			4424	1476	5900	608	96-SL	80-SL	300	970	10500	159.0
CANADA																													
de Havilland	DHC-2	PC-LS		1	6-7	P&W	R-985-AN6B	1	450-2300	95	6¼	48'0"	30'3"	9'0"	250.0	24.6	2960	2140	5100	1722	183-5000	143-5000	650	1020	18000	115.0
	DHC-3	PC-LS		1	10-14	P&W	R-1340-S1H1-G	1	600-2250	216	10¾	58'0"	41'10"	12'7"	375.0	26.3	4371	3629	8000	2937	160-5000	139-5000	1006	1000	19000	160.0
FRANCE																													
Aubert	PA-204-S	P-L		1	3	Sn	4L-08	1	170-			39'3"	31'4"				1499		2646				746	2041		
Breguet	763	PC-L		2-3	107-130	P&W	CA-18	4	9600-	4043		141'0"	94'9"	35'6"	1998.9		68301	45456	113757	37258	261-	230-	2295	1480	19100	2116.4
	940	PC-L			21	Tur		4				58'4"	40'0"						14300			240-				
	Deux Ponts	PC-L			107-164	P&W	R-2800-C Series	4	9600-2500			140'0"	95'0"		1997.0				113800		250-	230-	2000			
Holste	MH-1521	PC-L		1	5	P&W	R-985	1	450-			45'0"	28'2"		271.0		3253		5954		168-	143-	745	1062		
Hurel-Dubois	HD-32	PC-L		3	44	P&W	R-1830-92	2	2400-			179'5"	91'6"				25243		39960	12300		168-	1660	1496		
	HD-321	PC-L		3	44	Wr	1525CV9-H-E	2	3050-			179'5"	91'6"				25243		44000	14700		168-	1660	1654		
Jodel	D-112	P-L		1	1	Cont		1	65-			26'9"	20'5"		138.0		630	530	1160		118-	106-	370	590	11500	

For abbreviations and references see page 246

For Directory of the Aircraft Manufacturers listed above, see page 286

U. S. AND FOREIGN CIVIL AIRCRAFT—*concluded*

MAKE AND MODEL	Type	A. T. C. Number	Number of Crew	Number of Seated Passengers	ENGINE: Make and Model	ENGINE: Number Used	ENGINE: Total Take-off Hp. at Specified RPM	Fuel Capacity (Gal.)	Oil Capacity (Gal.)	DIMENSIONS (Ft. & In.): Span	DIMENSIONS (Ft. & In.): Overall Length	DIMENSIONS (Ft. & In.): Height (Taxi Position)	DIMENSIONS (Ft. & In.): Wing Area (Gross) Sq. Ft.	DIMENSIONS (Ft. & In.): Aileron Area (Sq. Ft.)	WEIGHTS (Lb.): Empty	WEIGHTS (Lb.): Useful Load	WEIGHTS (Lb.): Gross	WEIGHTS (Lb.): Pay Load	PERFORMANCE: Maximum Speed at Altitude	PERFORMANCE: Cruising Speed at Altitude	PERFORMANCE: Range in Miles at Cruising Speed	PERFORMANCE: Initial Climb (Ft. per Min.)	PERFORMANCE: Service Ceiling with Normal Load (Ft.)	PERFORMANCE: Fuel Consumption at Cruising Speed (Lb. per Hr.)
FRANCE—*continued*																								
Morane-Saulnier MS-760	P-L		1	3	Cont Marbore II	2	1760*–2260‡	360	5¼	31'4"	32'11"	9'0"	194.0	21.0	4190	3210	7500		405–20000	345–23000	930	2300	34000	800.0
MS-500	P-L		1	2	Ar AS-10	1	240–	89½	4¾	46'9"	31'9"	12'6"	279.9		2264		3276		92–SL	76–	435			
MS-733	TP-L		1	2	Pot 6-D	1	230–	630	4	37'0"	30'7"	11'4"	236.0		2830		3856		162–SL	143–	621	1575		
S.I.P.A. 1000	P-L		1	1	Cont C-90-12-F	1	90–	16½		29'3"	17'11"	7'3"			738		1256	66	124–	112–	373			
1000	P-L		1	1	Cont	1	65–	16½		29'3"	17'11"	7'3"			683		1180	44	109–	99–	435			
S.N.C.A.N. Nord 2501	PC-L		3	42	Sn Hercules	2	4080–2800	1120	63	106'7"	72'0"	19'9"	1068.9	42.8	26200	19300	45500	16300	248–10000	202–10000	1550	1180	23600	770.0
Nord 3201	T-L		1	1	Sn 4-L-22	1		23	3½	38'5"	32'0"				1545	550	2095		143–	124–		1969		
856-N	P-L		1	3	Sn 4-L-06	1		26½		39'6"	29'3"	7'3"	55.3		1367		2205		118–	105–				
Nord 1203-II	P-L		1	3	Reg 4-LO	1	135–2280			33'5"	23'7"	9'1"	140.0		1336	367	2310	509	174–	136–	560	164	16400	
S.N.C.A.S.E. SE-210	PC-L		4	70–91	RR Avon RA-29	2	21000*–	4755		112'6"	103'4"	28'6"	1579.0		46300	44100	90400	21000		492–39300	2320	406		
SE-3130	H		1	4	Tur Artouste II	1	400*–33000			33'0"	31'9"	9'0"			1700	1300	3000		113–SL	106–	320	1180	14800	
S.N.C.A.S.O. SO-1221	H		1	1	Cont Palouste	1	250*–	66		36'0"	17'5"	8'7"	1012.0		730	950	1680	820	80–	62–	125	300	12000	220.0
ITALY																								
Aer Macchi MB-308	P-L		1	1	Cont C-85	1	85–2575	21	1	32'9½"	21'5"	7'2"	147.6	11.8	902	528	1430	528	106–SL	89–SL	470	630	14250	28.6
MB-308	P-L		1	1	Cont C-90	1	90–2475	21	1	32'9½"	21'5"	7'2"	147.6	11.8	902	528	1430	528	110–SL	92–SL	445			30.0
MB-308-I	P-S		1	1	Cont C-90	1	90–2475	21	1	32'9½"	21'8½"	8'9"	147.6	11.8	1035	484	1519	484	105–SL	89–SL	435			
MB-308-G	P-L		1	2	Cont C-90	1	90–2475	23¾	1	32'9½"	21'5"	7'2"	147.6	11.8	946	638	1584	638	108–SL	90–SL	335			32.7
MB-320	PC-L		1	5	Cont E-165	2	410–2600	93	8	42'7½"	28'5"	10'6"	227.1	16.2	3652	904	5500	944	162–SL	136–6500	810	925	14750	118.0
MB-320	PC-L		1	5	Cont E-225	2	450–2600	93	8	42'7½"	28'5"	10'6"	227.1	16.2	3652	904	5500	944	169–SL	143–6500	760	1220	17900	120.0
Piaggio P-148	P-L		1	2	Lyco O-435-A	1	190–2550	45	3	36'5"	27'7"	7'10"	200.0	16.4	1950	875	2825		146–SL	124–6500	450	845	14400	58.5
P-148-MT	T-L		1	1	Lyco O-435-A	1	190–2550	45	3	36'5"	27'7"	7'10"	200.0	16.4	1931	715	2646		147–SL	127–3000	570	900	18000	58.5
P-136-L-1	PC-LS	813	1	4	Lyco GO-480-B	2	540–3400	190	6	44'4½"	35'6"	12'7"	270.0	25.0	4400	1600	6000	935	184–SL	162–8000	990	1180	18500	216.0
P-136-L-2	PC-LS	Pend	1	4	Lyco GSO-480-A1A	2	680–3400	190		44'4½"	35'6"	12'7"	270.0	25.0	4620	1780	6400	935	215–8000	184–8200	940	1650	23500	240.0
P-149-D	PC-L		1	3–4	Lyco GO-480-B	1	270–3400	63	¾	36'6"	28'2"	9'7"	203.0	16.4	2530	1100	3630	700	190–SL	160–6500	620	1400	20600	108.0
SPAIN																								
A.I.S.A. 1-11B	P-L		2	N	Cont C-90	1	95–2625	20¾	1¼	30'7"	20'1"	6'2"	144.0	12.0	928	549	1477	N	127–SL	110–SL	425	695	14900	33.1
SWEDEN																								
SAAB 90A-2	P-L		2–3	32–40	P&W R-2180E-1	2	7200–2800	770	55	91'10"	69'11"	23'3"	922.0	69.4	21960	13310	35270	9500	277–10500	240–10000	1450	1350	25600	825.0
91-B	TP-L		1	2	Lyco O-435-A	1	190–2550	46	3	34'9"	26'0"	7'2"	146.0		1580	990	2570		170–SL	169–5000	700	880	19200	54.0
91-C	TP-L		1	3	Lyco O-435-A	1	190–2550	42	3	34'9"	26'0"	7'2"	146.0		1625	1060	2685		169–SL	168–5000	630	840	17800	54.0

ABBREVIATIONS

‡—Plus.
*—Pounds of thrust.
†—With wing tip tanks.
▲—With auxiliary tank, 610.
(a)—5,600 hp. and 1,460 lb. thrust.
(b)—6,400 hp. and 1,460 lb. thrust at 14,500 rpm.
All—Allison Div.
Ar—Argus.
AU-L—Agricultural or utility, land.
Av—Alvis, Ltd.
Br—Bristol Aeroplane Co.
C-L—Cargo, land.
Cont—Continental Motors Corp.
DH—de Havilland Engine Co., Ltd.
DS-L—Duster-sprayer, land.
ET-LS—Executive transport, land or sea.
Frank—Franklin (Aircooled Motors, Inc.)
H—Helicopter.
Kie—Kiekhaefer Corp.
L—Land.
Lyco—Lycoming-Spencer Div.
N—No or none.
NA—Not available.
PC-L—Passenger or cargo, land.
PC-LS—Passenger or cargo, land or sea.
PC-S—Passenger or cargo, sea.
PCS-L—Passenger, cargo or survey; land.
PE-L—Passenger or executive, land.
Pend—Pending.
P-L—Passenger, land.
P-LS—Passenger, land or sea.
Pot—Potez.
P-S—Passenger, sea.
P&W—Pratt & Whitney Aircraft Div.
Reg—Regnier.
RR—Rolls-Royce, Ltd.
SL—Sea level.
Sn—S. N. E. C. M. A.
T-L—Trainer, land.
TP-L—Trainer or passenger, land.
Tur—Turbomeca.
WM—Walter Mikron.
Wr—Wright Aeronautical Corp.

For Directory of the Aircraft Manufacturers listed above, see page 286

★ 1956 U.S. ROTARY WING AIRCRAFT ★

MAKE AND MODEL	GENERAL					ENGINE			MAIN ROTOR								ANTI-TORQUE ROTOR					WEIGHTS (Lb.)			PERFORMANCE							LANDING GEAR	
	A. T. C. Number	Number of Seats	Fuel Capacity (Gal.)	Octane Number Recommended	Oil Capacity (Gal.)	Make and Mode	Number Used	Rated Hp. at Specified R. P. M.	Number Used	Location	Blades per Rotor	Diameter of Rotor (Ft. In.)	Blade Area (Sq. Ft.)	Type (If more than one used)	Rotor R. P. M. at Cruising Speed	Disc Area (Sq. Ft.)	Number of Blades	Rotor Diameter (Ft. In.)	Blade Area (Sq. Ft.)	Rotor R. P. M. at Cruising Speed	Disc Area (Sq. Ft.)	Gross (Normal Load)	Empty	Useful Load	Max. Speed at Altitude	Cruising Speed at Altitude	Fuel Consumption Cruising Speed (Lb./hr.)	Range (Miles) at Cruising Speed	Rate of Climb: Maximum (Ft./min.)	Rate of Climb: Vertical (Ft./min.)	Service Ceiling—Normal Load	Type	Tread—Main Gear
Bell. 47G (H-13G, HTL-6)		3	43	91	2	Frank... 6V-200-C32	1	200–	1		2	35'1½"	35.3		340	965	2	5'8"	2.4	1550	25.9	2350	1435	941	80–	78–	72	225	800	400	12500	S	7'6"
XV-3		4				P&W	1	450–	1	Tan	3							(Data	Restricted)			175*–									S	
47G-2 (H-13H)		3	43			Lyco VO435	1	200–3100	1	C	2	35'1½"	35.3		340	965	2	5'8"	2.4	1550	25.9	2350	1553	797	100–	80–		210*				S	
XH-13F		3				Cont. Artouste	1	280*–	1	C	2						2	(Data	Restricted)													S	
61 (HSL-1, XHL-1)		4	425			P&W R-2800	1	1900–	2	Tan	2	51'6"						(Data	Restricted)						150*–							Qua	
47H		3	35	91	2	Frank. 6V4-200-C32AB	1	200–	1	C	2	35'1½"	35.3		340	965	2	5'8"	2.4	1550	25.9	2350	1480	870	100*–			200*				S	7'6"
47J (HUL-1)		4	35	80	3	Lyco O-435-V1	1	250–	1	C	2	37'6"					2								100*–			200*				S	7'6"
Cessna CH-1	3H10	2–4	60	91	3	Cont FSO-470-A	1	260–3000	1		2	35'0"	37.9		346	962	2	7'0"	3.3	1636	38.5	3000	1975	1025	122–SL	100*–SL	120	290	1000*		12000*	S	8'4"
Doman LZ-5		8	110	100	5	Lyco SO-580-D	1	400–3300	1		4	48'0"	73.6		205	1810	3	10'0"	6.2	1000	78.5	5250	3250	2000	98–3000	83–3000	111	180	800	300	10000	Qua	7'2"
YH-31		4	110	100	5	Lyco SO-580-D	1	400–3300	1		4	48'0"	73.6		205	1810	3	10'0"	6.2	1000	78.5	4700	3250	1450	105–3000	86–3000	111	220	1000	500	14000	Qua	7'2"
Gyrodyne GCA-2C		7				P&W R-985	1	450–2300	2	CA	2	48'0"			192	1810						5750	3800	1950	75*–SL	60–SL		217	1030	340	9200	Tri	
GCA-4I (XRON-1)		1				Nel H-58	1		2	CA	2							(Data	Restricted)														
Hiller UH-12C	6H2	3	26	91	2½	Frank. 6V4-200-C33	1	200–3100	1	C	2	35'0"	32.3		338	963	2	5'6"	2.3	1957	23.8	2500	1642	858	84–	71–	87	138	770		1200	Skid♦	7'6"†
HJ-1		2	50	72	N	Own 8RJ2B	2	40*–	1	C	2	23'0"	17.6		550	415	1	2'8"	.8	3550	5.5	1080	544	536	68–SL	60–SL	744	28	680	0	6900	Skid	7'0"
Kaman K-240 (HTK-1)	1H3	3	40	91		Lyco O-435	1	250–	2	LI	2	40'0"		Int	233			(Data	Restricted)													Qua	7'6"
HOK-1		4	100	100		P&W R-1340	1	600–	2	LI	2	47'0"		Int				(Data	Restricted)													Qua	7'6"
Kellet KH-15		1				RM	2		1		2							(Data	Restricted)													Tri	
McDonnell XH-20		1				Own	2				2	5'0"										620	280	320	50–								
XHJD-1		10				P&W	2	450–				91'0"										11000			115–								
XV-1		4				Cont.	1		1			26'0"						(Data	Restricted)													Skid	
Cargo Unloader									1		3							(Data	Restricted)														
Piasecki H-21B		22	300	100		Wri 1820-103	1	1425–2700	2	Tan	3	44'0"		Tan			N					13300	8600	4700	130–SL	98–5000		370	1100*	900*	10000	Tri	
H-21C		22	300	100		Wri 1820-103	1	1425–2700	2	Tan	3	44'0"		Tan			N					13300	8730	4570	130–SL	98–5000		370	1100*	900*	10000	Tri	
YH-16		43		100		P&W 2180	2	1850–	2	Tan	3	82'0"		Tan			N					32000*			125*–			200*			18000*	Tri	
YH-16A		43				All T-38	2	1800*–	2	Tan	3	82'0"		Tan			N								125*–			200*			18000*	Tri	
Rotor Craft		1		N	N		2		1	C	2						1	(Data	Restricted)													N	
Sikorsky S-55	1H4	12	185	80	9½	P&W R-1340	1	600–2250	1	F	3	53'0"			194	2206	2	8'9"		1360	59.1	7200	4795	2405	101–	86–	222	405	780	200	11500	Qua	11'0"
S-59		4	135	JP4	1½	Cont. Artouste	1	425*–35000	1	C	4	35'0"			338	961	3	6'4"		1867	31.6	3625	2200	1453	147–SL	138–SL	370	288	2290	1100	17300	Conv	8'0"
S-58		14	220	115	12¾	Wri R-1820-211	1	1525–2800	1	F	4	56'0"				2460	4	9'4"			68.7	12600	7530	5070	132–SL	104–	492	270	1500	600	9800	Conv	12'0"
S-56						P&W R-2800	2	1900–2600	1		5	72'0"				4080		(Data	Restricted)													Conv	

ABBREVIATIONS

+—Plus.
♦—Navy model, quadracycle.
†—Navy model, 7' 8".
*—Pounds of thrust.

All—Allison Div.
C—Center.
CA—Co-axial.
Cont—Continental Motors Corp.
Conv—Conventional.
F—Forward.
Frank—Franklin (Aircooled Motors).
Int—Intermeshing.
LI—Lateral intermeshing.
Lyco—Lycoming-Spencer Div.
N—No or none.
Nel—Nelson.
P&W—Pratt & Whitney Aircraft Div.
RM—Reaction Motors
S—Skid.
SL—Sea level.
Tan—Tandem.
Tri—Tricycle.
Wri—Curtiss-Wright.

For Directory of the Aircraft Manufacturers listed above, see page 286

RECIPROCATING TYPE

ENGINE MAKE AND MODEL	A.T.C. Number	GENERAL DATA											RATINGS									Propeller Drive Ratio (to −1)	Weight (Lb.)		Carburetor		Ignition System—Make	Starting		Installation Dimensions (Overall—Ins.)			Height above Engine Bed	Diameter Mounting Ring or Distance Between Bearers
		Arrangement	Cooling Medium	Number of Cylinders Bore and Stroke (In.)	Total Piston Displacement (Cu. In.)	Compression Ratio (to −1)	B.M.E.P. at Maximum Hp. (Lb. per Sq. In.)	Blower Ratio	Cylinder Material	No. of Valves per Cylinder: Intake	No. of Valves per Cylinder: Exhaust	Valve Arrangement	Maximum (Except Take-off): Horsepower	Maximum (Except Take-off): R. P. M.	Maximum (Except Take-off): At Sea Level or Altitude (Ft.)	Take-off: Horsepower	Take-off: R. P. M.	Cruising: Horsepower	Cruising: R. P. M.	Octane Rating of Fuel Required		Engine Dry—Without Hub or Starter	Per Maximum Hp. (Except Take-off)	Number Used and Make	Type		Make	Method	Length	Height or O. D.	Width		
Continental																																	
A65-8	205	Hor	Air	4-3⅞x3⅝	171.0	6.30	131	N	(1)	1	1	In	65	2300	SL	65	2300	55	2150	73	D	176	2.70	1-Str	FL	Eis	N	EM	31.00	23.30	31.50		
C85-12	233	Hor	Air	4-4⅛x3⅝	188.0	6.30	138	N	(1)	1	1	In	85	2575	SL	85	2575	61	2300	73	D	176	2.14	1-Str	FL	Scin	N		31.00	24.20	31.50		
C85-8F	233	Hor	Air	4-4⅛x3⅝	188.0	6.30	139	N	(1)	1	1	In	85	2575	SL	85	2575	61	2300	73	D	184	2.07	1-Str	FL	Scin	DR	EM	32.00	24.20	31.60		
C90-8F	252	Hor	Air	4-4⅛x3⅝	200.9	7.00	143	N	(1)	1	1	In	90	2475	SL	90	2455	64	2200	80	D	184	2.07	1-Str	FL	Scin	DR	EM	31.00	24.20	31.50		
C90-12F	252	Hor	Air	4-4⅛x3⅝	200.9	7.00	143	N	(1)	1	1	In	90	2475	SL	95	2655	64	2200	80/87	D	188	2.06	1-Str	FL	Scin	DR	EM	32.00	24.20	31.60		
E-185	246	Hor	Air	6-5x4	471.0	7.00	135	N	(1)	1	1	In	185	2300	SL	205	2600	135	2070	80/87	D	355	1.96	1-Str	PI	Scin	DR	EM	46.66	22.30	33.41		
E225-8	287	Hor	Air	6-5x4	471.0	7.00	143	N	(1)	1	1	In	225	2650	SL	225	2650	175	2400	80/87	D	367	1.50	1-Str	PI	Scin	Ecl	EM	46.66	22.30	33.41		
O-470-11	269	Hor	Air	6-5x4	471.0	7.00	140	N	(1)	1	1	In	190	2300	SL	213	2600			80	D	395	2.07	1-Str	PI	Scin	Ecl	EM	45.20	30.10	33.41		
W-670-23	162	Rad	Air	7-5½x4⅝	667.8	6.10	130	N	(1)	1	1	In	240	2200	SL	240	2200	175	2000	80/87	D	519	2.12	1-Str	FL	Scin			35.56	42.25	42.50		
*O-470-5		Hor	Air	6-5x4	471.0	7.00	148	2.00	(1)	1	1	In	250	3200	13500	295	3200	250	3200	91/96	D	470	1.88	1-Ben	PI	Ben	Ben	EM	38.56	33.75	31.88		
R975	34	Rad	Air	9-5x5½	973.0	6.30	186	10.15	(1)	1	1	In	500	2500	6700	525	2500	500	2500	100/130	D	725	1.45	1-Ben	PI	Ben	Sev	EM	42.44	44.50			
O-470-B	273	Hor	Air	6-5x4	471.0	8.00	156	N	(1)	1	1	In	240	2600	SL	240	2600	180	2360	91/96	D	410	1.71	1-Ben	PI	Scin	DR	EM	43.31	19.62	33.62		
O-470-13A	269	Hor	Air	6-5x4	471.0	7.00	146	N	(1)	1	1	In	225	2600	SL	225	2600			80	D	415	1.84	1-Ben	PI	Scin	Ecl	EM	40.90	26.44	33.62		
O-470-2		Hor	Air	6-5x4	471.0	7.00	146	10.36	(1)	1	1	In	225	2600	SL	265	2600			100/130	D	474	1.89	1-Ben	PI	Scin	DR	EM	37.73	30.77	33.62		
FSO-470-A		Hor	Air	6-5x4	471.0	6.00	146	10.13	(1)	1	1	In	260	3000	SL	260	3000	210	3000	91/96	D	514	1.98	1-Ben	PI	Scin	DR	EM	39.64	34.54	33.62		
E-225-4	267	Hor	Air	6-5x4	471.0	7.00	143		(1)	1	1	In	225	2650	SL	225	2650	175	2400	80/87	D	347	1.54	1-Ben	PI	Scin	Ecl	EM	46.66	22.30	33.41		
O-470-E	273	Hor	Air	6-5x4	471.0	7.00	146	N	(1)	1	1	In	225	2600	SL	225	2600			80/86	D	390	1.73	1-Ben	PI	Scin	DR	EM	43.31	19.62	33.32		
O-300-A, O-300-B	253	Hor	Air	6-4⅛x3⅞	301.0	7.00	141	N	(1)	1	1	In	145	2700	SL	145	2700			80/86	D	277	1.91	1-MS	FL	Scin	DR	EM	35.38	23.25	31.50		
GSO-526		Hor	Air	6-5½x4¼	526.0	6.00	151	12.00	(1)	1	1	In	300	3000	SL	320	3000			91/96	.688	540	1.80	1-Ben	PI	Scin	DR	EM	52.28	23.96	34.68		
GO-526		Hor	Air	6-5½x4¼	526.0	7.00	148	N	(1)	1	1	In	255	2600	SL	290	3200			80/86	.688	406	1.60	1-Ben	PI	Scin	DR	EM	49.12	23.00	34.68		
O-526		Hor	Air	6-5½x4¼	526.0	7.00	147	N	(1)	1	1	In	225	2300	SL	225	2300			80/86	D	428	1.90	1-MS	FL	Scin	DR	EM	36.03	27.75	34.61		
O-470-J	273	Hor	Air	6-5x4	471.0	7.00	165	N	(1)	1	1	In	250	2550	SL	250	2600			80/87	D	381	1.52	1-MS	FL	Scin	DR	EM	36.03	27.75	32.32		
O-470-K, O-470-L	273	Hor	Air	6-5x4	471.0	7.00	149	N	(1)	1	1	In	230	2600	SL	230	2600			80/87	D	404	1.76	1-MS	FL	Scin	DR	EM	36.03	27.75	33.56		
O-470-M	273	Hor	Air	6-5x4	471.0	8.00	156	N	(1)	1	1	In	240	2600	SL	240	2600			91	D	409	1.70	1-BM	FL	Scin	DR	EM	43.31	19.62	33.56		
Franklin																																	
4A4-100-B3	239	Hor	Air	4-4½x3½	225.0	7.00	136	N	(2)	1	1	In	100	2600	SL			75	2370	80	D	214	2.14	1-MS	FL	Eis	AL	EM	30.68	20.59	30.81	12 17/32	
6A4-150-B3	238	Hor	Air	6-4½x3½	335.0	7.00	136	N	(2)	1	1	In	150	2600	SL			113	2370	80	D	291	1.94	1-MS	FL	Eis	DR	EM	37.37	22.59	30.81	13 17/32	
6V4-178-B3	244	Ver	Air	6-4½x3½	335.0	7.00	140	N	(2)	1	1	In	178	3000	SL					80	D	294	1.65	1-MS	FL	Scin	DR	EM	36.00	26.81	30.81		
6V4-165-B3F	244	Ver	Air†	6-4½x3½	335.0	7.00	130	N	(2)	1	1	In	165	3000	SL					82	D	339	2.05	1-Str	FL	Scin	DR	EM	40.62	29.81	30.81		
6A4-165-B3	238	Hor	Air	6-4½x3½	335.0	7.00	139	N	(2)	1	1	In	165	2800	SL			124	2550	80	D	307	1.86	1-MS	PI	Scin	DR	EM	37.37	25.31	30.81	13 17/32	
6V4-200-C32, C33	244	Ver	Air	6-4½x3½	335.0	8.50	152	N	(2)	1	1	In	200	3100	SL					91	D	306	1.53	1-BM	P-FL	Scin	DR	EM	26.81	36.00	30.81		
6AG4-190-B13	238	Hor	Air	6-4½x3½	335.0	7.60	141	N	(2)	1	1	In	190	3100	SL					80	.632	324	1.11	1-BM	P-FL	Scin	DR	EM	40.59	26.12	30.81		
6V6-245-B16F	258	Ver	Air†	6-4¾x4	425.0	7.50	139	N	(2)	1	1	In	245	3275	SL	215	3275	184	3275	80	D	353	1.44	1-Str	PI	Eis	Opt	EM	33.62	39.93	33.28		
Jacobs																																	
R-755A	237	Rad	Air	7-5¼x5	757.0	6.00	143	N	(1)	1	1	In	300	2200	SL	300	2200	178	1900	80	D	505	1.68	1-Str	FL	Scin	Ecl	EM	39.50	44.00			16.50
R-755B	237	Rad	Air	7-5¼x5	757.0	6.00	131	N	(1)	1	1	In	275	2200	SL	275	2200	160	1900	80	D	480	1.72	1-Str	FL	Scin	Ecl	EM	39.50	44.00			16.50
*R-755EH		Rad	Air	7-5¼x5	757.0	6.50	146	N	(1)	1	1	In	350	2500	SL	350	2500	200	2000	91	.649	500	1.71	1-Str	FL	Scin	Ecl	EM	39.50	44.00			16.50
R-755-8	121	Rad	Air	7-5¼x5	757.0	5.40	117	N	(1)	1	1	In	225	2000	SL	215	2200	160	1900	80	D	471	2.09	1-Str	FL	Scin	Ecl	EM	39.50	44.00			16.50
Lycoming																																	
O-235-C1	223	Hor	Air	4-4⅜x3⅞	233.3	6.75	141	N	(1)	1	1	In	108	2600	SL	115	2900	81	2360	80	D	207	1.92	1-MS	FL	Scin	DR	EM	29.56	22.53	32.00		
O-290-D2B	224	Hor	Air	4-4⅞x3⅞	289.0	7.00	137	N	(1)	1	1	In	135	2600	SL	140	2800	100	2350	80/87	D	236	1.75	1-MS	FL	Scin	DR	EM	29.56	22.81	32.24		(a)
O-320	274	Hor	Air	4-5⅛x3⅞	319.8	7.00	138	N	(1)	1	1	In	150	2700	SL	150	2700	112	2450	80/87	D	244	1.62	1-MS	FL	Scin	DR	EM	29.40	23.12	32.24		(a)
O-340-A1A	277	Hor	Air	4-5⅛x4⅛	340.4	8.40	146	N	(1)	1	1	In	170	2700	SL	170	2700	127	2150	91/96	D	250	1.47	1-MS	FL	Scin	DR	EM	29.56	24.68	32.55		(a)
O-435-A	228	Hor	Air	6-4⅞x3⅞	434.0	6.50	136	N	(1)	1	1	In	190	2550	SL	190	2550	143	2310	80	D	364	1.91	1-MS	FL	Scin	DR	EM	38.10	29.61	32.24		(b)
GO-435-C2B	228	Hor	Air	6-4⅞x3⅞	434.0	7.30	146	N	(1)	1	1	In	240	3000	SL	260	3400	180	2750	80/87	.642	430	1.79	1-Str	PI	Scin	Opt	EM	40.04	29.40	33.12		(c)
GO-480-F6	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	142	N	(1)	1	1	In	265	3100	SL	275	3100	200	2800	80/87	.642	431	1.63	1-Str	PI	Scin	Opt	EM	42.18	28.02	33.12		(c)
SO-480-A1A		Hor	Air	6-5⅛x3⅞	479.7	7.30	168	11.27	(1)	1	1	In	325	3200	5500	325	3200	260	3200	100/130	D	444	1.37	1-Str	PI	Scin	Opt	EM	38.53	22.73	33.12		(c)
GSO-480-A1A6	284	Hor	Air	6-5⅛x3⅞	479.7	7.30	154	11.27	(1)	1	1	In	320	3200	9500	340	3400	225	2750	100/130	.642	500	1.79	1-Str	PI	Scin	Opt	EM	46.22	22.73	33.12		(c)
SO-580-A1A	285	Hor	Air	8-4⅞x3⅞	578.0	7.30	160	7.91	(1)	1	1	In	350	3000	5000	400	3300	280	3000	100/130	D	578	1.60	1-Str	PI	Scin	Opt	EM	49.20	30.75	33.18		(c)
GSO-580-D	256	Hor	Air	8-4⅞x3⅞	578.0	7.30	160	7.91	(1)	1	1	In	350	3000	5000	400	3300	260	2750	100/130	.642	608	1.73	1-Str	PI	Scin	Opt	EM	56.86	34.22	33.18		(c)
O-360-A1A	286	Hor	Air	4-5⅛x4⅜	361.0	8.50	146	N	(1)	1	1	In	180	2700	SL	180	2700	135	2450	91/96	D	254	1.41	1-MS	FL	Scin	DR	EM	29.56	24.68	33.37		(a)
*VO-435-A1B	279	Hor	Air	6-4⅞x3⅞	434.0	7.30	142	N	(1)	1	1	In	250	3200	SL	260	3400	200	3200	80/87	D	391	1.56	1-MS	FL	Scin	Opt	EM	35.17	25.19	33.32		
GO-480-B1B	275	Hor	Air	6-5⅛x3⅞	479.7	7.30	143	N	(1)	1	1	In	260	3000	SL	270	3400	195	2750	80/87	.642	436	1.68	1-Str	PI	Scin	Opt	EM	38.64	28.02	33.12		(c)
GO-480-C1B6	275	Hor	Air	6-5⅛x3⅞	479.7	8.70	154	N	(1)	1	1	In	290	3000	SL	295	3400	210	2750	100/130	.642	456	1.64	1-Str	PI	Scin	Opt	EM	38.64	29.40	33.12		(c)

	GO-480-C2C6	275	Hor	Air	6-5¼x3⅞	479.7	6.70	152	N	(1)	1	1	In	285	3100	SL	295	3400	210	2750	100/130	.642	447	1.57	1-Str	Pl	Scin	Opt	EM	42.18	28.02	33.12		(c)
	GO-480-D1A	275	Hor	Air	6-5¼x3⅞	479.7	7.30	143	N	(1)	1	1	In	260	3000	SL	275	3400	195	2750	80/87	.642	454	1.75	1-Str	Pl	Scin	Opt	EM	40.29	27.46	33.12		(c)
	*VSO-560-A1A	265	Hor	Air	8-4⅞x3⅞	576.0	7.30	160	7.91	(1)	1	1	In	350	3000	5000	400	3300	280	3000	100/130	D	574	1.64	1-Str	Pl	Scin	Opt	EM	49.20	30.75	33.18		
Pratt & Whitney	D5	230	Rad	Air	14-5¾x5½	2004.0	6.70	186	N	SD	1	1	In	1200	2550	6400	1450	2700			100/130	.500	1585	1.32	1-Str	Pl	Scin			59.86	49.10			
	2SD13-G	230	Rad	Air	14-5¾x5½	2004.0	6.70	186		SD	1	1	In	1200	2550	5000	1450	2700			100/130	.500	1605	1.34	1-Str	Pl	Scin			59.86	49.10			
	(2-Speed B lower Engine)							170						1100		14000								1.46										
	CA3	231	Rad (With Water Injection)	Air	18-5¾x6	2804.0	6.70	196	N	SD	1	1	In	1800	2600	6000	2100 2400	2800 2800	1900	2600	100/130	.450	2317	1.29	1-Str	Pl	Scin			78.40	52.80			
	CA15	231	Rad (With Water Injection)	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	6000	*2100 2400 2500	2800 2800	1900	2600	100/130	.450	2350	1.31	1-Str	Pl	Scin			78.40	52.80			
	(2-Speed B lower Engine)							174						1600		16000			1600					1.47										
	CA18	231	Rad (With Water Injection)	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	6000	*2100 2400 2500	2800 2800	1900	2600	100/130	.450	2350	1.31	1-Str	Pl	Scin			78.40	52.80			
	(2-Speed B lower Engine)							174						1600		14500	*1900	^2600	1675					1.47										
	CB3	264	Rad (With Water Injection)	Air	18-5¾x6	2804.0	6.70	196	N	SD	1	1	In	1800	2600	8500	2050 2400 2500	2700 2800	1800	2600	100/130	.450	2357	1.31	1-Str	Pl	Scin			81.40	52.80			
	CB4	264	Rad (With Water Injection)	Air	18-5¾x6	2804.0	6.70	196	N	SD	1	1	In	1800	2600	8500	2200 2400 2500	2800 2800	1900	2600	108/135	.450	2357	1.31	1-Str	Pl	Scin			81.40	52.80			
	CB16	264	Rad	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	8500	*2050 2400 2500	▼2700 2800	1800	2600	100/130	.450	2390	1.33	1-Str	Pl	Scin			81.40	52.80			
	(2-Speed B lower Engine)							174						1600		16000	*1850	^2600	1700					1.49										
	CB17	264	Rad	Air	18-5¾x6	2804.0	6.70	196		SD	1	1	In	1800	2600	8500	^2200 2400 2500	2800 2800	1900	2600	108/135	.450	2390	1.33	1-Str	Pl	Scin			81.40	52.80			
	(2-Speed B lower Engine)							185						1700		14500	*1900	^2600	1750					1.41										
Wright	957C7BA1	261	Rad	Air	7-6½x6⅛	1301.0	6.20	178	7.21	(1)	1	1	In	700	2400	7300	800	2600	490	2200	91/98	.5625	1055	1.51	1-Str	Pl	Boa	Opt	EM	48.12	50.45			32.75
	968C9HE1	259	Rad	Air	9-6½x6⅛	1823.0	6.80	222	7.21	(1)	1	1	In	1275	2500	3500	1475	2800	890	2400	100/130	.5625	1390	1.09	1-Str	Pl	Boa	Opt	EM	48.50	54.95			32.75
	976C9HE1		Rad	Air	9-6½x6⅛	1823.0	6.80	222	7.21	(1)	1	1	In	1275	2500	3500	*1525	2800	890	2400	100/130	.4475	1460	1.15	1-Str	Pl	Scin	Opt	EM	50.07	56.75			32.75
	(2-Speed B lower Engine)							195	8.69					1125		10600	1250	2700	785					1.30										
	975C18CB1	270	Rad	Air	18-6½x5⅛	3350.0	6.70	218	6.46	(1)	1	1	In	2400	2600	5300	2800	2900	1600	2400	115/145	.4375	3065	1.23	1-Str	Pl	Scin	Opt	EM	78.47	56.59			40.75
	(2-Speed B lower Engine)							182	8.67					2000		16000			1500					1.53										
	972TC18DA1	272	Rad	Air	18-6½x5⅛	3350.0	6.70	240	6.46	(1)	1	1	In	2650	2600	6500	3250	2900	1910	2400	115/145	.4375	3551	1.34	1-Str	Pl	Scin	Opt	EM	89.53	56.59			41.80
	(2-Speed B lower Engine)							222	8.67					2450		17900	2550	2600	1800					1.45										
	DA2		Rad	Air	18-6½x6⅛	3350.0	6.70	240	6.46	(1)	1	1	In	2650	2600	6500	3250	2900	1910	2400	115/145	.4375	3543	1.34	1-Str	Pl	Scin	Opt	EM	89.53	56.59			41.80
	(2-Speed B lower Engine)							222	8.67					2450		17900	2550	2600	1800					1.45										
	DA3		Rad	Air	18-6½x6⅛	3350.0	6.70	249	6.46	(1)	1	1	In	2750	2600	5500	3250	2900	1910	2400	115/145	.4375	3557	1.29	1-Str	Pl	Scin	Opt	EM	89.53	56.59			41.80
	(2-Speed B lower Engine)							222	8.67					2450		17900	2550	2600	1800					1.45										
	DA4		Rad	Air	18-6½x6⅛	3350.0	6.70	249	6.46	(1)	1	1	In	2750	2600	5500	3250	2900	1910	2400	115/145	.4375	3549	1.29	1-Str	Pl	Scin	Opt	EM	89.53	56.59			41.80
	(2-Speed B lower Engine)							222	8.67					2450		17900	2550	2600	1800					1.45										
	968TC18EA1		Rad	Air	18-6½x6⅛	3350.0	6.70	259	6.46	(1)	1	1	In	2850	2600	4300	3400	2900	1910	2400	115/145	.4375	3609	1.27	1-Str	Pl	Scin	Opt	EM	89.53	56.59			41.80
	(2-Speed B lower Engine)							222	8.67					2450		17900	2550	2800	1800					1.47										
	982C9HE1		Rad	Air	9-6½x6⅛	1823.0	6.80	222	7.21	(1)	1	1	In	1275	2500	3500	*1525	2800	890	2400	100/130	.5625	1469	1.15	1-Str	Pl	Scin	Opt	EM	50.07	55.75			32.75
	749C18BD1		Rad	Air	18-6½x6⅛	3350.0	6.50	211	6.67	(1)	1	1	In	1800	2400	16000	1900	2600	1400	2400	100/130	.4375	2915	1.62	1-Str		Scin	Opt	EM	76.52	55.62			
	(2-Speed B lower Engine)							207	6.46					2100		4400	2500	2800	1470					1.39										
	745C18BA3		Rad	Air	18-6½x6⅛	3350.0	6.50	181	6.67	(1)	1	1	In	1800	2400	15000	1900	2600	1400	2300	100/130	.4375	2780	1.51	1-Str		Scin	Opt	EM	76.26	55.78			
	(2-Speed B lower Engine)							197	6.46					2000		4800	2200	2800						1.39										
	988TC18EA2		Rad	Air	18-6½x6⅛	3350.0	6.70	223	6.67	(1)	1	1	In	2450	2600	17900	2550	2600	1800	2400	115/145	.355	3739	1.53	1-Str		Scin	Opt	EM	89.52	56.59			
	(2-Speed B lower Engine)							259	6.46					2850		4300	3400	2900	1910					1.31										

ABBREVIATIONS

*—Helicopter engine with vertical crankshaft.
†—Cooled by fan.
▼—2800 with water injection.
^—2500 with water injection.
(1)—Steel with aluminum head.
(2)—Aluminum with cast iron sleeves.
(a)—A rear type mounting is provided by four mounting bosses integral with the crankcase.
(b)—A rear type mounting is provided by five mounting bosses, four of which are integral with the crankcase sections and the remaining boss is located at the rear of the oil pump.
(c)—A longitudinal type mounting is provided by four mounting bosses integral with the crankcase.
AL—Electric Auto-Lite Co.
Ben—Bendix Aviation Corp.
BM—Bendix or Marvel-Schebler.
Boa—American Bosch Corp.
D—Direct.
DR—Delco-Remy Div.
Ecl—Eclipse Pioneer Div.
Eis—Eiseman Corp.
EM—Electric motor.
FL—Float.
Hor—Horizontally opposed.
In—In head with push rods and rocker arms.
MS—Marvel-Schebler Carburetor Div.
N—No or none.
Opt—Optional.
P-FL—Pressure injection or float.
PI—Pressure injection.
Rad—Radial.
Scin—Scintilla Magneto Div.
SD—Steel and Dural.
Sev—Several.
SL—Sea level.
Str—Stromberg-Elmira Div.
Ver—Vertically opposed.

For Directory of the Engine Manufacturers listed above, see page 286

Value of Shipments of Aircraft Propellers and Other Products of Their Plants

Based on data from Industry Division, Bureau of the Census

	Value of All Products	Total	Aircraft Propellers and Parts						Other Products and Services	Shipments of Propellers for Civil Aircraft
			For Military Aircraft			For Civilian Aircraft				
			Total	Propellers	Parts	Total	Propellers	Parts		
1955	$160,531,000	$120,034,000	$101,907,000	$51,127,000	$50,780,000	$18,127,000	$9,313,000	$8,814,000	$40,497,000	12,611
1954	190,578,000	157,558,000	139,066,000	65,909,000	73,157,000	18,492,000	9,645,000	8,847,000	33,020,000	9,282
1953	213,425,000	188,029,000	168,845,000	100,043,000	68,802,000	19,184,000	10,659,000	8,525,000	25,396,000	9,941
1952	155,348,000	139,344,000	119,746,000	(d)	(d)	19,598,000	10,951,000	8,647,000	16,004,000	10,951
1951	113,104,000	100,089,000	81,195,000	(d)	(d)	18,894,000	9,681,000	9,033,000	13,015,000	10,504

(d)—Not shown separately to avoid disclosing figures of individual companies.

AIRCRAFT GAS TURBINES 1956

U. S. AND BRITISH ★ ★ ★ ★ ★

Line Number	MAKE AND MODEL	ENGINE TYPE: Turbo-jet or Prop.	ENGINE TYPE: Single or Coupled	PERFORMANCE: TAKE-OFF: Thrust (Lb.)	TAKE-OFF: Prop. Shaft (Hp.)	TAKE-OFF: RPM	TAKE-OFF: Fuel Consumption	NORMAL: Thrust (Lb.)	NORMAL: Prop. Shaft (Hp.)	NORMAL: RPM	NORMAL: Fuel Consumption	MAX. CRUISING: Thrust (Lb.)	MAX. CRUISING: Prop. Shaft (Hp.)	MAX. CRUISING: RPM	MAX. CRUISING: Fuel Consumption	Propeller Gearing Type	COMPRESSOR: Type	COMPRESSOR: No. of Stages	COMPRESSOR: Pressure Comp. Ratio	COMPRESSOR: Blade Root	TURBINE: No. of Stages	TURBINE: Blade Roots
	UNITED STATES																						
1	Allison J33-A-18A	TJ	S	4600	N		1.14‡	3900	N		1.12‡		N			N	Ce	DI	4.35	In		
2	J33-A-35	TJ	S	4600	N		1.14‡	3900	N		1.12‡		N			N	Ce	DI	4.35	In		
3	J33-A-37	TJ	S	4600	N		1.14‡		N				N			N	Ce	DI	4.35	In		
4	J71-A-2	TJ	S	10000	N				N				N			N	A					
5	J71-A-11	TJ	S	10000	N				N				N			N	A					
6	T56-A-1	TP	S	726	3460	13820	0.54†	702	3094	13820	0.55†	170	1800	13820	0.43†	P	A	14	9.25	FT		
7	Boeing 502-2	TP	S		210	37500	1.29		175	38000	1.30†					P	Ce	1	3.15	In	2	W
8	500	TJ*	S	190		37500	1.39	170		36500	1.37						Ce	1	3.15	In	1	W
9	502-6	TP	S		210	37500	1.29		175	36500	1.30†						Ce	1	3.15	In	2	W
10	502-6 Twin	TP	C		420	37500	1.29		350	36500	1.30†						Ce	1	3.15	In	2	W
11	502-7	AS	S					140◇		36500	1.71♣						Ce	1	3.15	In	2	W
12	502-8	TP	S		210	37500	1.29		175	36000	1.30†					P	Ce	1	3.15	In	2	W
13	502-10	TP	S		270	37500	1.00		240	36500	1.02					P	Ce	1	4.10	In	2	W
14	502-11	AS	S						210◇	36500	1.17♣						Ce	1	4.10	In	2	W
15	Cont'l. XT-51-T-1 (Artouste I)	TP	S		280	35000	.97†		260	35000	1.07					SpG	Ce	1	3.80	In	2	In
16	XT-51-T-3 (Artouste II)	TP	S		425	34800	.98†									SpG	Ce	1	3.95	In	2	In
17	Model 320 (Palas)	TJ		350		34000	1.18‡	290		31500	1.10						Ce	1	3.90	In	1	In
18	Model 420 (Aspin II)	DuF	S	790		34500	.55‡	660		34500	0.53						Ce	1	3.90	In	2	In
19	XT-51-T-5 (Artouste 260-1)	TP	S		400	35000	1.00†		328	33800	1.11†					P	Ce	1	3.90	In	2	In
20	YJ69-T-9	TJ		920		22700	1.13‡	725		21000	1.06‡						Ce	1	4.00	In	1	In
21	J69-T-19	TJ		1000		21250	1.27‡	795		20000	1.25‡						Ce	1	3.70	In	1	In
22	140	Ac			185	35000	1.40†		165	35000	1.40†						Ce	1	4.00	In		
23	Fairchild J44-R-20	TJ	S	1000	N	15780			N				N			N	M	1	2.70	In	1	W
24	J44-R-3	TJ		1000			1.55‡	900			1.60‡					N	MF	1	2.70	In		
25	General Electric J47-25	TJ	S	5970*			1.06‡	4785			1.01‡	3990			1.01‡		A	12	5.35	Do		
26	J73-3	TJ	S	9000			.85‡										A	12		Do		
27	Pratt & Whitney T34	TP	S		6000		.62†										A	13			3	
28	J57	TJ	S	10000					Data	Restricted							A					
29	JT-7H	TJ	S	7250			1.14‡	5600			1.12‡	3750			1.14‡		Ce	1			1	
30	PT2G-1	TP		1250	6000	1000	.63†	1125	5200	977	0.67†	1000	4200	955	0.70†		A					
31	Wright J-65	TJ	S	7220	N	6300	.92‡	6400	N	8000			N			N	A	13		FT	2	FT
32	J-67	TJ		7800					Data	Restricted												
33	YT49-W-1	TP							Data	Restricted												
	GREAT BRITAIN																					
34	Armstrong Siddely M'ba ASM6	TP	S															7				
35	Double Mamba ASMD1	TP	C	810	2540	15000	.75	740	2165	14500	.97					P	A	10	5.00	FT	2	FT
36	Double Mamba ASMD3	TP	C	595		13400	.75															
37	Double Mamba ASMD4	TP	C																			
38	Python ASP3	TP	S	1180	3870	8000	.61	1100	3230	7800	.63	1050	2920	7800	.65	P	A	14	5.00	Do	2	FT
39	Sapphire ASSa6	TJ	S	8000	N	8600	.90								.85	N	A	13		Do	2	FT
40	Sapphire ASSa7	TJ	S	10500	N	9600	.89									N	A					
41	Viper ASV3	TJ	S	1640	N	13400	1.09	1540	N	13100	1.10	1400	N	12700	1.10	N	A	7	3.50	CL	1	FT
42	Viper ASV5	TJ	S	1640	N	13400	1.09	1540	N	13100	1.10	1400	N	12700	1.10	N	A	7	3.50	CL	1	FT
43	Viper ASV6	TJ	S	1900	N	13400	1.15									N	A	7	3.70	CL	1	FT
44	Viper ASV7R	TJ	S	2470	N	13400	2.26	940	N	13400	1.09					N	A	7	3.70	CL	1	FT
45	Mamba ASM5	TP	S	300	1480	15000	.71‡			15000				15000			A	10				
46	Mamba ASM6				1650																	
47	Sapphire SA12	TJ		8500		8600	.90‡															
48	Viper ASV8	TJ		1750		13800	1.10‡	1640		13500		1485		13100			A	7	3.70	In		
49	Viper ASV10	TJ		2000		13400	1.01‡										A	7				
50	Blackburn Palas 600	TJ	S	390		35000	1.20‡	340		33000	1.14‡	385		34000	1.17‡		Ce	1	4.12	In	1	In
51	Palouste 500	AS	S														Ce	1		In	2	In
52	Turmo 500	TP	S		335		.92†		295		.94†					SpG	Ce	1	4.19	In	2	In
53	Turmo 600	TP	S		450		1.04†		400	34000	1.07†					SpG	Ce	1	4.12	In	2	In
54	Coupled Turmo 600	TP	C		900		1.04†		800	34000	1.07†		854	34500	1.05†	SpG	Ce	1	4.12	In	2	In
55	Artouste 500	TP	S		345		.89†		300	34000	.93†					SpG	Ce	1	4.19	In	2	In
56	Artouste 600	TP	S		475		.99†		414	34000	1.03†					SpG	Ce	1	4.12	In	2	In
57	Marbore	TJ	S	883		22800	1.15‡	706		21000	1.07‡						Ce	1	3.90	In	1	In
58	Coupled Turmo 500		C		676	35000	.92‡		586	34000	.93‡					SpG	Ce	1	4.19	In		
59	Bristol Olympus	TJ	S	11000			.77‡										A			FT		FT
60	705 Proteus	TP	S	1200	3320	12000	.62†					1100	2920	11700	.64†		AC	12*1	7.20	FT	4	FT
61	755		S	1320	3650	12600	.62					1210	3210	12300	.64							
62	BE25	TP	S	2730	4000		.65										A			FT		FT
63	Orpheus	TJ		4000													A					
64	de Havilland Gyron	TJ	S	15000	N				N				N			N	A					
65	Goblin 35	TJ	S	3500	N	10750	1.19‡	2320	N	9500	1.16‡	3000	N	10250	1.16‡	N	Ce	1	3.67	In	1	FT
66	Ghost 48, Mark 1 & 2	TJ	S	4850	N	10250	1.21‡	3440	N	9250	1.15‡	4100	N	9750	1.16‡	N	Ce	1	4.50	In	1	FT
67	Napier Nomad 2 NNm6	TP	C	228	3046	2050	.35†	145	2393	1900	.35†		2050	1450	.33†	SpG	A	12	8.25			
68	Eland NEI1	TP	S	825	2690	12500	.62†	700	2070	12000	.66†	585	1665	11500	.69†	P	A	10	7.00	FT	3	FT
69	Oryx N.I.Dr. 1	TG			750	21900	.68†		610	21000	.74†					N	A	(b)	(c)	FT		
70	Oryx N.I.Dr. 4	TG			825	22400	.66†		670	21400	.71†					N	A	(b)	(c)	FT		

For abbreviations and references see pages 252 and 253

For directory of the Turbine Manufacturers listed above, see page 286

★ ★ ★ ★ ★ U. S. AND BRITISH

Arrangement	No. Used	Material	Air Intake	No. of Pumps	No. of Emergency Pumps	Fuel Controls	Afterburning	Recommended Octane Rating of Fuel	No. Fuel Nozzles per Combustion Chamber	No. of Igniters	Type of Igniter	Sump Capacity (Pts.)	Max. Oil Consumption (Pts./Hr.)	Starter	Generator	Governer	Vacuum Pump	Fuel Pumps	Length (In.) With Extension Pipe	Length (In.) Without Extension Pipe	Max. Diameter (In.)	Dry Weight With Component Parts (Lb.)	Dry Weight Without Component Parts (Lb.)	Line Number
UNITED STATES																								
				1	N	M	N		1	2	Sp	24.0	1.2	Gov	Gov			Pes		94.0	49.0	1790		1
				1	N	M	N		1	2	Sp	24.0	2.2	Gov	Gov			Pes		106.0	48.0	1820		2
				1	N	M	N		1	2	Sp	24.0	2.2	Gov	Gov			Pes		156.0	48.0	1800		3
							Y												284.6		42.0	4669		4
							N												191.0		47.6	4090		5
				1	N	M	N	JP-4	1	6	Sp	Dry	3.6	Gov	Gov	Gov	Gov	Pes		145.2	40.3	1645		6
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				39.9		23.2		230	7
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				31.7		22.2		120	8
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				40.0		24.0		250	9
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var								500	10
Cy	2	SS	DF	2		M	N	G,De,K,JP-4	1	2	SG	16	Ne	Var	Var								314	11
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				45.2		31.4		277	12
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				46.8		23.2			13
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				41.8		22.7	330		14
Cy	2	SS	DF	1		M	N	G,De,K,JP-4	1	2	SG	8	Ne	Var	Var				46.5		31.5	320		
An	1		A	1		M	N	G,K,JP-4		2	Sp		0.5						31.5	23.0	20.5	215	208	15
An	1		A	1		M	N	G,K,JP-4		2	Sp		0.5							44.3	23.2	250	236	16
An	1		A	1		M	N	G,K,JP-4		2	Sp		0.5						41.6		16.0		137	17
An	1		A	1		M	N	G,K,JP-4		2	Sp		0.5						47.7		25.9		315	18
An	1		A	1	N	M	N			2	Sp		0.5						47.0		16.5	460	300	19
An	1		A				N	G,K,JP-4		2	Sp		0.2	Br	Br					50.5	27.0	364	333	20
An	1	NS	A	1		M	N	G,K,JP-4		2	Sp		0.5	Br	Br	Own		Own		43.3	22.3	349	312	21
An	1		DF	1	N	H	N	JP-4		2	Sp	8	0.5	Eem	Eem	Own		Own	55.0	41.8	31.0	245	215	22
An	1	SS	DF	1	N	E	N	G,JP	12	1	Sp	N	Ne	Br	Br	Ww		Pes	88.4	75.4	22.0	335		23
An	1	SS	DF	1	N	H		G,JP	12	2	Sp	N	Ne	JH				Pes	95.6		22.0	441	370	24
Cy			DF	1	(a)	M-H	N	JP-1,3,4††	1	2	Sp		2.0[m]						145.0		38.8	2554		25
				2	N	M-H	N	JP-1,3,4††	1	2	Sp		2.0[m]						146.0		38.8			26
An																			156.8		34.1	2550		27
																								28
								MIL-F-5161B												109.8	50.5	2060		29
								JP-4					5.0[m]						156.8		34.1	2590		30
An	1	SS	DF	2	N	I			36	2				GE	GE	Th		Th	138.8		37.3	2696	2500	31
		•									Data	Restricted												32
											Data	Restricted												33
GREAT BRITAIN																								
																			65.8					34
Cy	12	NS	DF	2	N	LU	N	AK,De	4	4	ASM	Sump	4.0	Rot	N	Dow	N	Dow	98.7	79.8	**		2125	35
								AK,De											98.7				2200	36
																								37
Cy	11	NS	RF	1	N	ASM	N	AK	4	2	ASM	Sump	2.0	BTH	N	LU	N	LU	112.7	96.8	54.5		3150	38
An			DF	1	N	ASM	N	AK	38	2	KLG			Rot		Dow		Dow	133.9	107.0	35.3		2500	39
An			DF					AK											132.0		37.4		3075	40
An			DF	1	N	LU	N	AK	24	2	KLG		1.7	AT	Rot	LU	N	LU	65.5	45.4	23.3		365	41
An			DF	1	N	ASM	N	AK	24	2	KLG		1.7	Rot	Rot	LU	N	LU	65.8	45.4	28.0		465	42
An		NS	DF	1	N	LU	N	AK,G	24	2	KLG			D-R		LU	N	LU		65.8	25.0		380	43
An		NS	DF	2	N	LU	N	AK,G	24	2	KLG			Own		LU	N	LU		65.8	28.0		550	44
								AK,De						Rot					88.2		33.0		820	45
																								46
																							2808	47
An	1		DF	1	N	H	N	AK	24	2	K-L	14	1.5	Rot	R-E	LU	N	LU	65.8	45.6	28.0		515	48
An																							570	49
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple	43.7	30.0	18.0		168	50
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple		33.0	18.0		208	51
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple		52.0	18.0		303	52
An	1	NS	DF	1	N	M	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple		52.0	18.0		303	53
An	2	NS	DF	2	N	LU	N		RI	2	T	16	1.0	Rot	Rot	LU	N	Ple		54.0	42.0		602	54
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple		44.0	19.0		297	55
An	1	NS	DF	1	N	LU	N		RI	1	T	8	0.5	Rot	Rot	LU	N	Ple		44.0	19.0		297	56
An	1	NS	DF	1	N	LU	N		RI	1	T			Rot	Rot	LU	N	Ple		43.1	22.3		309	57
An	2	NS	DF	2	N	M	N		RI	2	T	16	1.0	Rot	Rot	LU	N	Ple		54.0	42.0		602	58
																								59
Cy	8	NS	DF				N			2	Sp		2	Rot				LU		124.0	40.0	3585		60
																				100.5	39.5	2946		61
			DF				N			2	Sp											3000		62
																				110.0	41.8	3050		63
																				73.0	32.4			
			DF																	154.0	46.3			64
Cy	16	NS	DF	2			N	DED2482	1	2	Sp	10	2.0	Rot	RNB	Own	Ple	LU		100.5	49.9	1630		65
Cy	10	NS	DF	2			N	K,JP-4,DED2482	1	2		14	2.4	Rot	BN	*	Ple	LU		121.0	53.0	2120		66
	3			1		M		AK,De,G	1				2.2	Rot						109.6	58.5		3560	67
Cy	6	NS	DF	1		M	N	DERD2486	1	2	Sp	Dry	1.0	Rot		Rtl		LU		122.0	36.1	1575		68
Cy	5	NS		1		M	N		1	2	Sp	Dry	1.0	Rot				LU	83.5		19.3	495*		69
Cy	5	NS		1		M	N		1	2	Sp	Dry	1.0					LU	83.5		19.3	495*		70

For abbreviations and references see pages 252 and 253

For directory of the Turbine Manufacturers listed above, see page 286

AIRCRAFT GAS

Line Number	MAKE AND MODEL	ENGINE TYPE: Turbo-jet or Prop.	ENGINE TYPE: Single or Coupled	PERFORMANCE: TAKE-OFF: Thrust (Lb.)	TAKE-OFF: Prop. Shaft (Hp.)	TAKE-OFF: RPM	TAKE-OFF: Fuel Consumption	NORMAL: Thrust (Lb.)	NORMAL: Prop. Shaft (Hp.)	NORMAL: RPM	NORMAL: Fuel Consumption	MAX. CRUISING: Thrust (Lb.)	MAX. CRUISING: Prop. Shaft (Hp.)	MAX. CRUISING: RPM	MAX. CRUISING: Fuel Consumption	Propeller Gearing Type	COMPRESSOR: Type	COMPRESSOR: No. of Stages	COMPRESSOR: Pressure Comp. Ratio	COMPRESSOR: Blade Root	TURBINE: No. of Stages	TURBINE: Blade Roots
	GREAT BRITAIN — *concluded*																					
1	Rolls-Royce.... Dart 505	TP	S	385	1400	14500	.83†					295	1120	13800	.90	P	Ce	2	5.50	In	2	FT
2	..... Dart Mk 506	TP	S	365	1400	14500	.80†					295	1120	13800	.87†	P	Ce	2	5.50	In	2	FT
3	..... Dart Mk 510	TP	S	370	1600	14500	.75†					330	1285	13800	.80†	P	Ce	2	5.50	In	3	FT
4	..... Dart 511	TP	S	370	1600	14500	.75†					300	1285	13800	.80†	P	Ce	2	5.50	In	3	FT
5	..... R. Da 7	TP		505	‡910	15000	.73†					445	1950	14400	.74†	P	Ce	2	5.60	In		
6	..... Nene 3, 102	TJ	S	5100	N	12500	1.06‡	4660	N	12200	1.04	4090	N	11800	1.02	N	Ce	1	4.50	In	1	FT
7	..... Nene Mk 10	TJ	S	5100	N	12500	1.06‡	4090	N	11800	1.02‡	4660	N	12200	1.04‡	N	Ce	1	4.50			FT
8	..... Avon RA7	TJ	S	7500	N		.92‡		N				N			N	A	12		In	2	FT
9	..... Avon RA21	TJ	S	8150	N		.93‡		N				N			N	A	12		In	2	FT
10	..... Avon RA25		S	7000	N		.90‡		N				N			N	A	12		In	2	FT
11	..... Avon RA14	TJ	S	9500	N		.84‡		N				N			N	A					
12	..... Avon RA26		S	10000	N		.86‡		N				N			N	A					
13	..... Avon RA28		S	10000	N		.88‡		N				N			N	A					
14	..... Avon I	TJ	S	6500	N	7800	.88		N				N		.86	N	A	12		In	2	FT
15	..... Avon RA7R	TJ	S	9500	N		1.90		N				N			N	A	12		In	2	FT
16	...Avon RA24, RA24R, RA29	TJ																				
17	..... Conway	TJ	S	13000													A					
18	..... Soar RSr2	TJ	S	1810			1.26‡		N								A					
19	..... Derwent 8	TJ	S	3600	N	14700	1.05‡		N			3090	N	14100	1.03	N	Ce	1	4.00	In	1	[FT
20	..... Tyne R. B. 109	TP		1175	4020		.57†					785	3310		.57†	CE	A		12.00			

ABBREVIATIONS

‡Lb/hr/lb thrust.
‡‡—D. Eng. R.D. 2482.
†—Lb/hp/hr.
††—Mil-F-5572.
*—Lucas on Mk 1; Dowty on Mk 2.
**—Width, 52.8; height, 44.3.
■—Integral with pumps.
•—Plus.

▲—Gas generator.
■—Lb/hr.
△—Air horse power.
♦—Lb/Air hp/hr.
(a)—Included in main pump.
(b)—12 main and 4 auxiliary.
(c)—Main, 6.00; auxiliary, 1.80.
A—Axial.
Ac—Air compressor.
AC—Axial and centrifugal.
AG—Aviation gasoline.
AK—Aviation Kerosene.
An—Annular.
AS—Air supply.
AT—Air or turbine.
BN—B. T. H. or Newton.
Br—Breese Corp.
C—Coupled.
Ce—Centrifugal.
CE—Compound epicyclic.
CL—Clamped.
Cn—Cannular.
Cy—Cylindrical.
De—Diesel fuel.
DE—Double entry.
DF—Direct flow.
Di—Dual entry.
Do—Dovetail.
Dow—Dowty.
Du F—Ducted fan.

For Directory of Gas Turbine Manufacturers listed above, see page 286

Value of Backlog Reported by Manufacturers of Complete Aircraft, Engines and Propellers

Based on data from the Industry Division, Bureau of the Census

All Figures are in Millions of Dollars

Product	VALUE OF BACKLOG FOR QUARTERS ENDING— Sept. 30, 1955	June 30, 1955	Mar. 30, 1955	Dec. 31, 1954	Sept. 30, 1954	June 30, 1954	Mar. 30, 1954	Dec. 31, 1953	Sept. 30, 1953
Complete Aircraft and Parts									
For U. S. Military Customers	$ 8,526	$ 8,556	$ 9,190	$ 9,856	$ 9,821	$10,004	$10,657	$10,840	$11,210
Other Customers	1,126	965	777	769	665	667	719	764	734
Total	**$ 9,652**	**$ 9,521**	**$ 9,967**	**$10,625**	**$10,486**	**$10,671**	**$11,376**	**$11,604**	**$11,944**
Aircraft Engines and Parts									
For U. S. Military Customers	$ 2,485	$ 2,723	$ 2,503	$ 2,792	$ 3,144	$ 3,245	$ 3,465	$ 3,945	$ 5,033
Other Customers	203	168	136	118	113	116	132	135	140
Total	**$ 2,688**	**$ 2,891**	**$ 2,639**	**$ 2,910**	**$ 3,257**	**$ 3,361**	**$ 3,597**	**$ 4,080**	**$ 5,173**
Aircraft Propellers and Parts									
For U. S. Military Customers	$ 119	$ 133	$ 149	$ 165	$ 174	$ 180	$ 169	$ 191	$ 234
Other Customers	24	19	14	25	28	26	24	27	27
Total	**$ 143**	**$ 152**	**$ 163**	**$ 190**	**$ 202**	**$ 206**	**$ 193**	**$ 218**	**$ 261**
Other Products and Services	$ 1,443	$ 1,362	$ 1,323	$ 1,044	$ 920	$ 1,009	$ 934	$ 851	$ 879
Total—All Products	**$13,926**	**$13,926**	**$14,092**	**$14,769**	**$14,865**	**$15,247**	**$16,100**	**$16,753**	**$18,257**

TURBINES—*concluded*

Arrangement	No. Used	Material	Air Intake	No. of Pumps	No. of Emergency Pumps	Fuel Controls	Afterburning	Recommended Octane Rating of Fuel	No. Fuel Nozzles per Combustion Chamber	No. of Ignitors	Type of Ignitor	Sump Capacity (Pts.)	Max. Oil Consumption (Pts./Hr.)	Starter	Generator	Governor	Vacuum Pump	Fuel Pumps	Length (In.) With Extension Pipe	Length (In.) Without Extension Pipe	Max. Diameter (In.)	With Component Parts (Lb.)	Without Component Parts (Lb.)	Line Number
GREAT BRITAIN—*concluded*																								
Cy	7	NS	DF	1	N	M	N	AK	1	2	T	25	1.0	Rot	N	(a)	N	LU	.....	95.1	38.0	.....	1030	1
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU	.....	95.1	38.0	.....	1044	2
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU	.....	97.0	38.0	.....	1110	3
Cy	7	NS	DF	1	N	M	N	AK,JP-1,0‡‡	1	2	Sp	25	1.0	Rot	N	(a)	N	LU	.....	97.0	38.0	.....	1122	4
Cy	7	NS	DF	1	.....	M	N	AK‡‡	1	2	Sp	25	1.0	Rot	.....	(a)	.....	LU	.....	90.8	37.9	.....	1201	5
Cy	9	NS	DE	2	N	M	N	AK,G	1	2	Sp	9	1.0	Rot	N	(a)	N	LU	.....	96.8	49.5	.....	1621	6
Cy	9	NS	DE	2	N	M	N	AK,G	1	2	Sp	11	1.0	Rot	.....	(a)	.....	LU	.....	104.8	49.5	.....	1620	7
Cy	8	.....	DE	2	N	.....	N	AK	1	2	Sp	16	1.0	Ple	.....	(a)	.....	LU	.....	102.1	42.2	.....	2460	8
Cy	8	NS	DE	2	N	.....	.....	AK	1	2	Sp	16	1.0	Ple	.....	(a)	.....	LU	.....	102.1	42.2	.....	2460	9
Cy	8	NS	DE	2	N	.....	N	AK	1	2	Sp	16	1.0	Ple	.....	(a)	.....	LU	.....	102.3	42.6	.....	2440	10
An	.....	.....	DE	.....	.....	.....	.....	AK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113.3	41.5	.....	2860	11
An	.....	.....	DE	.....	.....	.....	.....	AK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113.3	41.5	.....	2790	12
An	.....	.....	DE	.....	.....	.....	.....	AK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113.3	41.5	.....	2900	13
Cy	8	NS	DE	.....	N	.....	N	AK	1	2	T	16	1.5	Ple	N	(a)	N	LU	.....	103.1	42.4	.....	2240	14
Cy	8	.....	DE	2	.....	.....	Y	.....	1	2	Sp	16	1.0	Ple	.....	(a)	.....	LU	.....	117.5	42.2	.....	2960	15
																								16
An	.....	.....	.....	.....	.....	.....	.....	AK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	128.8	41.5	.....	.....	17
An	.....	.....	.....	.....	.....	.....	.....	AK	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77.0	15.8	.....	275	18
Cy	9	NS	DE	1	N	M	N	AK,G	1	2	T	22	1.0	Rot	N	(a)	N	LU	.....	83.1	43.0	.....	1280	19
An	.....	.....	DF	.....	.....	.....	N	.....	.....	2	Sp	.....	.....	.....	.....	.....	.....	.....	.....	100.3	40.5	.....	1935	20

E—Integrated electronic.
Eem—Eemco.
FT—Fir tree.
G—Gasoline.
GD—Generator drive.
GE—General Electric.
Gl—Glow.
Gov—Government furnished equipment.
H—Hydraulic.
In—Integral.
JH—Jack & Heintz.
K—Kerosene.
K-L—KLG or Lodge.
LU—Lucas.
M—Mechanical.
MF—Mixed flow.
M-H—Mechanical and hydraulic.
N—No or none.
Ne—Negligible.
NS—Nimonic sheet.
O-R—Own or Rotox.
P—Planetary.
RF—Reverse flow.
RI—Rotary injector.
RNB—Rotax, Newton or B. T. H.
Rot—Rotax.
R-E—Rotax or English Electric.
S—Single.
SG—Spark and glow.
Sp—Spark.
Pes—Pesco.
Ple—Plessey.
SpG—Spur gearing.
SP—Shaft power.
SS—Stainless steel.
T—Torch.
TG—Turbo gas generator.
Th—Thompson Products.
TJ—Turbo-jet.
TP—Turbo-prop.
Var—Various.
Ww—Woodward.
W—Welded.
Y—Yes.

For Directory of Gas Turbine Manufacturers listed above, see page 286

Value of New Orders and Net Sales Reported by Manufacturers of Complete Aircraft, Engines and Propellers

Based on data from the Industry Division, Bureau of the Census

All Figures are in Millions of Dollars

Product	NEW ORDERS[1] 1955 Third Quarter	1955 Second Quarter	1955 First Quarter	1954 Yearly Totals	1953 Yearly Totals	NET SALES 1955 Third Quarter	1955 Second Quarter	1955 First Quarter	1954 Yearly Totals	1953 Yearly Totals
Complete Aircraft and Parts										
For U. S. Military Customers	$ 1,115	$ 586	$ 421	$ 3,643	$ 5,134	$ 1,145	$ 1,220	$ 1,128	$ 4,626	$ 4,661
Other Customers	307	344	149	604	427	146	156	145	600	518
Total	$ 1,422	$ 930	$ 570	$ 4,247	$ 5,561	$ 1,291	$ 1,376	$ 1,273	$ 5,226	$ 5,179
Aircraft Engines and Parts										
For U. S. Military Customers	$ 104	$ 690	$ 222	$ 715	$ 1,142	$ 342	$ 457	$ 526	$ 1,868	$ 2,189
Other Customers	79	81	64	159	144	44	50	51	176	189
Total	$ 183	$ 771	$ 286	$ 874	$ 1,286	$ 386	$ 507	$ 577	$ 2,044	$ 2,378
Aircraft Propellers and Parts										
For U. S. Military Customers	$ 9	$ 14	$ 22	$ 125	$ 100	$ 23	$ 30	$ 29	$ 151	$ 176
Other Customers	9	10	8	30	23	4	5	9	32	27
Total	$ 18	$ 24	$ 30	$ 155	$ 123	$ 27	$ 35	$ 38	$ 183	$ 203
Other Products and Services	$ 403	$ 323	$ 461	$ 988	$ 641	$ 322	$ 280	$ 256	$ 795	$ 751
Total—All Products	$ 2,026	$ 2,048	$ 1,347	$ 6,264	$ 7,611	$ 2,026	$ 2,198	$ 2,144	$ 8,248	$ 8,511

1—New orders received during the quarter or year, less terminations during the various quarters.

CARDOX "Know-How"



The Priceless "Extra" Proved by THOUSANDS OF CARDOX Low Pressure Carbon Dioxide Fire Extinguishing Systems*

There's a lot more than just equipment that goes into a CARDOX Fire Extinguishing System.

Approved by:
Underwriters' Laboratories, Inc.
Manual Systems, 1940
Automatic Systems, 1941

Factory Mutual Laboratories
Manual Systems, 1942
Automatic Systems, 1942

First Installation—1939
Thousands of Systems since, for most of the nation's leading corporations and industries

CARDOX originated and pioneered low pressure Carbon Dioxide Fire Extinguishing Systems many years ago to protect hazards for which existing fire protection just wasn't good enough! Since then industry of all kinds has increasingly called upon CARDOX to protect its critical or specialized hazards, big and little. In solving new fire protection problems—and finding better answers to old ones—CARDOX gained an experience and "know-how" that are unduplicated in the field of fire protection. Research and engineering, to make CARDOX Fire Protection still better, never stops.

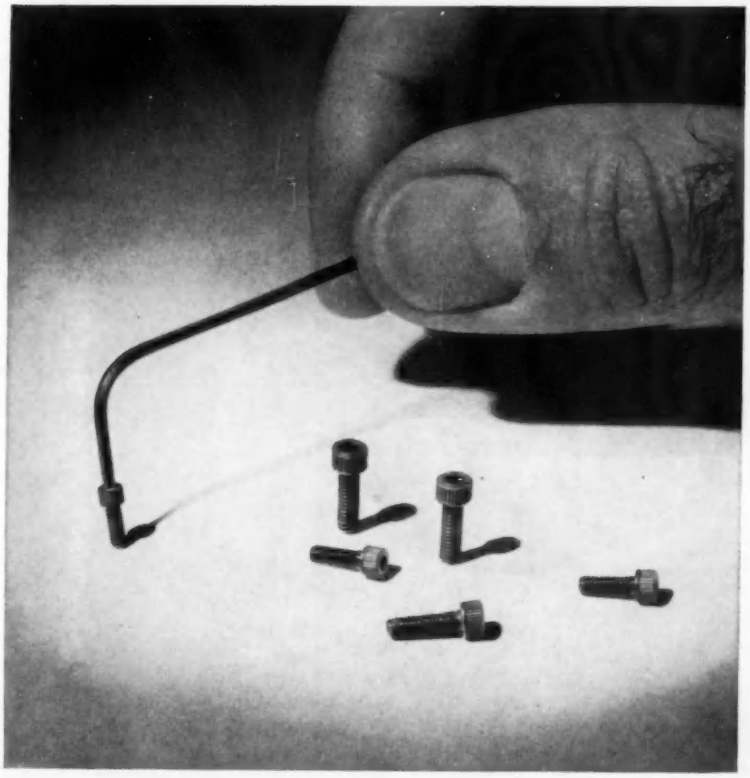
All of this is the priceless "extra" you get but *never pay for* in every CARDOX System—the "extra" you *cannot buy* at any price in any other fire extinguishing system.

*Covered by U. S. and Foreign Patents, Issued and Pending

CARDOX CORPORATION

Bell Building • Chicago 1, Illinois • District Offices in Principal Cities

Miniature screws aid standardization of small devices



Standard UNBRAKO miniature socket head cap screws are available in sizes # 0, # 1, # 2 and # 3, in heat treated alloy steel or stainless steel, at your authorized industrial distributor's. Standard lengths range from ⅛ to ½ in.

Tiny close-tolerance Unbrako screws available in standard sizes

New economies in the design of space-saving miniature equipment are possible with these UNBRAKO miniature socket head cap screws. Manufactured to timepiece precision, available locally, they save the costly necessity of designing special screws to fasten tiny parts in compact units. They're ideal for use in typewriters, calculators and computers, servomechanisms, electric and electronic equipment—and in countless other small, intricate devices where maximum reduction in bulk and weight is required with no sacrifice in strength of individual components or assemblies.

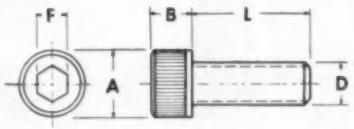
Fingers grip the knurled heads on these tiny screws positively for easy handling and fast assembly. Uniform hex sockets assure maximum wrenching torque. Controlled fillets under the heads prevent shearing of the heads. Threads are fully formed for maximum strength and exact fit. Extremely accurate head diameters permit their use in countersunk holes, saving weight by reducing the length of the screw required and making flush designs possible.

These standard UNBRAKO miniature screws are available at your authorized industrial distributor's. See him today. Or write us for Bulletin 2055 and samples. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 53, Pa.

See us at Booth 479—ASTE Show

HEAT-TREATED ALLOY STEEL

Class 3 Fit Standard



	Diameter	Threads per Inch NC	Threads per Inch NF	Length	Recommended Installation Torque in Inch-Pounds NC	Recommended Installation Torque in Inch-Pounds NF	Weight per 1000 in Pounds
#0	A .104		80	⅛		2.0	.152
	B .060		80	3/16		2.0	.182
	D .060		80	¼		2.0	.210
	F .050		80	⅜		2.0	.265
#1	A .118		72	⅛	3.5	3.5	.27
	B .073		72	3/16	3.5	3.5	.32
	D .073		72	¼	3.5	3.5	.37
	F .050		72	⅜	3.5	3.5	.47
#2	A .140	56		3/16	6.0	6.0	.42
	B .086	56		¼	6.0	6.0	.50
	D .086	56		⅜	6.0	6.0	.58
	F 1/16	56		½	6.0	6.0	.70
#3	A .161	48		3/16	8.5	9.5	.59
	B .099	48		¼	8.5	9.5	.70
	D .099	48		⅜	8.5	9.5	.81
	F 5/64	48		½	8.5	9.5	1.03

Standard Screws are threaded to the head. Special materials, lengths, and threaded lengths are available. One "High-Titan" UNBRAKO hex key is included with each package of 100 screws.

UNBRAKO®

SOCKET SCREW DIVISION

STANDARD PRESSED STEEL CO.

SPS

JENKINTOWN ■ PENNSYLVANIA



ACP Service knows no hours

Our Technical Service Department works round the clock when necessary to set up a process and keep it working effectively with minimum interruption in production.

Time is no factor when ACP technical service men move into your plant. They stick with the job until it's done. They not only furnish assistance in installing the system, but also instruct plant personnel in its operation. Then, to keep the process working effectively with a minimum of production slowdowns, they establish a schedule of periodic inspection, if you so desire. This permits ACP to check the operation of process and equipment, to analyze procedures, to suggest changes as needed to maintain uniform results.

This policy of service to its customers is not a new one with ACP—it has been going on for more than 40 years. And it doesn't stop with service in your plant. Our Engineering Department will design the equipment, our Pilot Plant will develop the process sequence, and our Quality Control Laboratories will maintain a continuing check on the processed metals. Write for complete information about ACP.

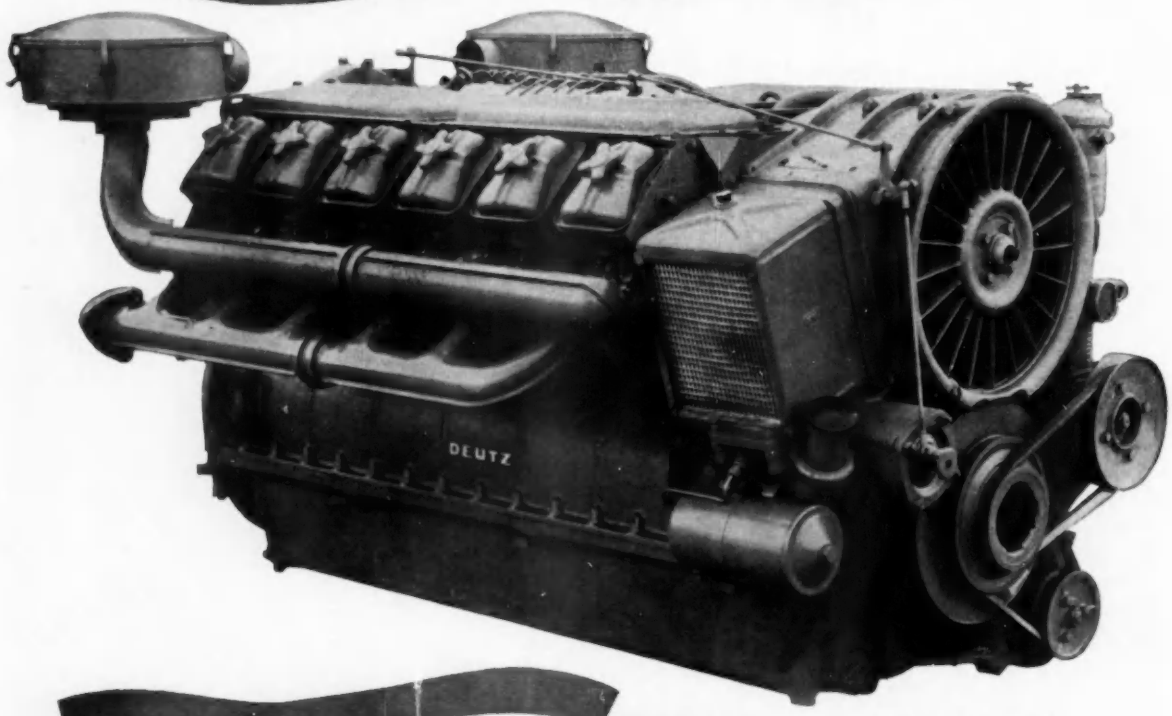
AMERICAN CHEMICAL PAINT COMPANY, Ambler 24, Pa.

DETROIT, MICHIGAN NILES, CALIFORNIA WINDSOR, ONTARIO

CHEMICALS ACP PROCESSES


What's Your Bearing?
Performance limits for jet aircraft engine components are headed in just one direction today—*straight up!*
Higher speeds, higher temperatures call for higher precision, higher dimensional stability.
Developmental work at Rollway is aimed at achieving more usable horsepower through the greater efficiencies realized at higher operating temperatures. New, high temperature steels are being examined for penetration into speed and temperature zones never before attempted.
To help you get your bearings in a hurry, call on Rollway for:
1 **First-line engineers** who have experience with high-temperature steels.
2 **Flexibility of service** from laboratory to delivery schedule.
3 **Down-to-earth cooperation** by engineering, design, and quality control people . . . every step of the way.
4 **Thorough performance charting,** up to and including pre-installation testing.
Wire, call or write ROLLWAY BEARING COMPANY, INC.
582 Seymour Street, Syracuse 4, N. Y.
ROLLWAY
BEARINGS
Complete line of Radial and Thrust Cylindrical Roller Bearings
ENGINEERING OFFICES: Syracuse • Boston • Chicago • Detroit • Toronto • Pittsburgh • Cleveland • Milwaukee • Seattle • Houston • Philadelphia • Los Angeles • San Francisco

AIR-COOLED DIESEL ENGINES



NOW AVAILABLE TO INDUSTRY

Twelve-cylinder engine, V-Type, 4-cycle, output up to 250 HP at 2300 RPM.

AIR-COOLING ADVANTAGES

- Lighter weight of engines, thus higher payload, absence of water jackets, pumps, radiators and water.
- Easier starting.
- Less fuel for more miles, particularly in the case of smaller loads.
- Lower oil consumption, because oil charges last longer.
- Longer cylinder life.
- Servicing is quicker and more convenient.

FOR DETAILED SPECIFICATIONS ON THE ABOVE ENGINE, SEE DIESEL ENGINE SPECIFICATION TABLES IN THIS ISSUE.

DEUTZ now offers to American Industry an extensive line of air-cooled Diesel engines. More than 100,000 of these engines are in operation all over the world and have demonstrated their superiority from the Arctic to the Tropics.

The DEUTZ engine is built in a range from 1 to 12 cylinders, developing from 8 to 250 B.H.P. These engines (V and straight types FL 514/614) are designed for trucks, tractors and busses, for marine applications, locomotives and rail-cars. Also for compressor-sets, pump-sets, generator-sets, for cranes and building machinery, as well as for use in the oil field.

DIESEL ENERGY CORPORATION
82 Beaver Street
New York 5, N. Y.
Certain territories open for distributors
I am interested in further data on "DEUTZ" Air-cooled Automotive Diesel Engines.

- ☐ Fleet Operator
- ☐ Dealer
- ☐ Distributor

Name .....
Title .....
Company .....
No. & Street .....
City ..... Zone ..... State .....

DIESEL ENERGY CORPORATION 82 BEAVER STREET NEW YORK 5, N. Y.

DEUTZ

AIR-COOLED DIESEL ENGINES



AUTOMOTIVE ENGINE SECTION

PRODUCTION SPECIFICATIONS

GASOLINE ENGINES

DIESEL ENGINES

SMALL GASOLINE ENGINES

OUTBOARDS

AI
AUTOMOTIVE INDUSTRIES
38TH
ANNUAL STATISTICAL ISSUE 1956



More than half* of the 7,943,969 passenger cars produced in the U.S. in the year 1955 were equipped with

PERFECT CIRCLE

type "98" chrome oil rings

* 52% were Perfect Circle's new Type "98" Chrome Oil rings. 48% were all other oil ring types combined, including other Perfect Circle oil ring types.

Type "98" oil ring—
U.S. patent numbers 2,635,022 and 2,695,825

GASOLINE ENGINES 1956

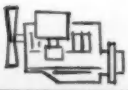
SMALL

MAKE AND MODEL	Designed for Use	Number of Cycles	ENGINE: Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to —1)	Valve Location	Horsepower: Rated at RPM	Horsepower: Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	GOVERNOR: Used	GOVERNOR: Type	Ignition System Type	FUEL SYSTEM: Type	FUEL SYSTEM: Make	Fuel Used	Starting Method
AIR COOLED																			
Briggs & Stratton 5S	General Purpose	4	Ver	1	2x1½	4.71	5.29	L	1.00-3200	.85-3200	1.60-3200	30	Y	Av	Mag	MV	Own	G	Rr
6	General Purpose	4	Ver	1	2x2	6.28	5.86	L	2.00-3600	1.70-3600	2.90-3600	34	Y	MA	Mag	Car	Own	G	Rr
6B	General Purpose	4	Ver	1	2⅛x1½	6.30	5.90	L	2.25-3600	1.90-3600	3.29-3600	23	Y	Av	Mag	Car	Own	G	Rr
6B-H	Lawn Mowers	4	Hor	1	2⅛x1½	6.30	5.90	L	2.25-3600	1.70-3600	2.92-3600	19½	Y	Av	Mag	Car	Own	G	Rr
6B-HS	Lawn Mowers	4	Hor	1	2⅛x1½	6.30	5.90	L	1.60-3200	1.36-3200	2.62-3200	18½	Y	Av	Mag	MV	Own	G	Rr
6B-S	General Purpose	4	Ver	1	2⅛x1½	6.30	5.86	L	1.60-3200	1.36-3200	2.60-3200	21	Y	Av	Mag	MV	Own	G	Rr
6S	General Purpose	4	Ver	1	2x2	6.28	5.86	L	1.60-3200	1.36-3200	2.60-3200	33	Y	Av	Mag	MV	Own	G	Rr
8	General Purpose	4	Ver	1	2½x2	7.95	5.40	L	2.50-3600	2.10-3600	3.70-3600	36	Y	MA	Mag	Car	Own	G	Rr
8B	General Purpose	4	Ver	1	2⅝x1¾	7.75	6.00	. . .	2.75-3600	2.34-3600	4.02-3600	25	Y	Av	Mag	Car	Own	G	Rr
8B-H	Lawn Mowers	4	Hor	1	2⅝x1¾	7.75	6.00	L	2.75-3600	2.34-3600	4.02-3600	19½	Y	Av	Mag	Car	Own	G	Rr
8B-HA	Lawn Mowers	4	Hor	1	2⅝x1¾	7.75	6.00	L	2.75-3600	2.34-3600	4.02-3600	22½	Y	Av	Mag	Car	Own	G	Rc
9	General Purpose	4	Ver	1	2¼x2½	8.95	5.40	L	3.35-3600	2.80-3600	4.90-3600	61	Y	Me	Mag	Car	Own	G	HR
14	General Purpose	4	Ver	1	2¾x2⅝	14.21	5.40	L	5.25-3600	4.40-3600	7.70-3600	76	Y	Me	Mag	Car	Own	G	HR
23	General Purpose	4	Ver	1	3x3½	22.97	5.40	L	8.40-3600	7.10-3600	12.30-3600	98	Y	Me	Mag	Car	Own	G	HR
Clinton AVS200, VS200	General Purpose	2	Ver	1	1⅝x1⅝	4.50	(a)	. . .	1.75-3600	1.50-3600	2.50-2600	15¾	Y	Av	Mag	Car	O-C	G	Rr
AVS400, VS400	General Purpose	2	Ver	1	2¼x1⅝	5.76	(a)	. . .	2.50-3600	2.10-3600	3.50-2600	15¾	Y	Av	Mag	Car	O-C	G	Rr
VS2100	General Purpose	4	Ver	1	2⅝x1⅝	7.20	5.95	L	1.75-3600	1.50-3600	2.70-2400	19	Y	Av	Mag	Car	O-C	G	Rr
VS100	General Purpose	4	Ver	1	2⅝x1⅝	7.20	5.95	L	2.50-3600	2.10-3600	3.70-2800	19	Y	Av	Mag	Car	O-C	G	Rr
VS3100	General Purpose	4	Ver	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.50-3600	4.50-2800	19	Y	Av	Mag	Car	O-C	G	Rr
VS800	General Purpose	4	Ver	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.50-3600	4.50-2800	38	Y	Av	Mag	Car	O-C	G	Rr
VS700	General Purpose	4	Ver	1	2x1⅞	5.89	5.90	L	2.00-3600	1.70-3600	3.20-2800	35	Y	Av	Mag	Car	O-C	G	Rr
A200	General Purpose	4	Hor	1	1⅝x1⅝	4.50	(a)	L	1.75-3600	1.50-3600	2.50-2600	18	Y	Av	Mag	Car	O-C	G	Rr
A400	General Purpose	4	Hor	1	2¼x1⅝	5.76	(a)	L	2.50-3600	2.10-3600	3.50-2600	18	Y	Av	Mag	Car	O-C	G	Rr
A2100	General Purpose	4	Hor	1	2⅝x1⅝	7.20	5.95	L	1.75-3600	1.50-3600	2.70-2400	19	Y	Av	Mag	Car	O-C	G	Rr
100	General Purpose	4	Hor	1	2⅝x1⅝	7.20	5.95	L	2.50-3600	2.10-3600	3.70-2800	19	Y	Av	Mag	Car	O-C	G	Rr
3100	General Purpose	4	Hor	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.50-3600	4.50-2800	19	Y	Av	Mag	Car	O-C	G	Rr
D700	General Purpose	4	Hor	1	2¼x1⅞	6.65	5.90	L	2.00-3600	1.70-3600	3.20-2800	39	Y	Fb	Mag	Car	O-C	G	Rr
900	General Purpose	4	Hor	1	2⅝x1⅞	8.30	6.00	L	3.00-3600	2.50-3600	4.50-2800	41	Y	Fb	Mag	Car	O-C	G	Rr
1200	General Purpose	4	Hor	1	2¾x2⅛	10.20	5.90	L	3.60-3600	3.10-3600	5.60-2800	43¾	Y	Fb	Mag	Car	O-C	G	Rr
1600	General Purpose	4	Hor	1	3⅛x2⅝	16.30	5.90	L	6.30-3200	5.40-3200	10.50-2800	76	Y	Fb	Mag	Car	O-C	G	Rr
2500	General Purpose	4	Hor	1	3½x3¼	25.00	5.90	L	9.00-3200	7.70-3200	16.20-2200	104	Y	Fb	Mag	Car	O-C	G	Rr
Continental AU7, AU7B	General Purpose	4	(b)	1	2¼x2	7.10	5.70	L	2.00-3600	1.70-3600	3.02-3000	36	Y	MA	Mag	Car	CTZ	G	BR
AU7R	General Purpose*	4	(b)	1	2¼x2	7.10	5.70	L	2.00-3600	1.70-3600	3.02-3000	41	Y	MA	Mag	Car	CTZ	G	BR
AD7, AW7	Lawn Mowers	4	Ver	1	2¼x2	7.10	5.70	L	2.00-3600	1.70-3600	3.02-3000	41	Y	Av	Mag	Car	CTZ	G	BR
AU7B	General Purpose	4	(b)	1	2¼x2	7.10	6.00	L	2.00-3600	1.70-3600	3.02-3000	36	Y	MA	Mag	Car	CTZ	G	BR
AU8, AU8B	General Purpose	4	(b)	1	2½x2	7.95	5.80	L	2.50-3600	2.12-3600	4.10-2600	36	Y	MA	Mag	Car	CTZ	G	BR
AU8R	General Purpose*	4	(b)	1	2½x2	7.95	5.80	L	2.50-3600	2.12-3600	4.10-2600	38	Y	MA	Mag	Car	CTZ	G	BR
AD8, AW8	Lawn Mowers	4	Ver	1	2½x2	7.95	5.80	L	2.50-3600	2.12-3600	4.10-2600	41	Y	Av	Mag	Car	CTZ	G	BR
AU85	General Purpose	4	(b)	1	2⅝x2	8.40	6.00	L	3.00-3600	2.75-3600	4.50-2600	36	Y	MA	Mag	Car	CTZ	G	BR
AU85R	General Purpose*	4	(b)	1	2⅝x2	8.40	6.00	L	3.00-3600	2.75-3600	4.50-2600	41	Y	MA	Mag	Car	CTZ	G	BR
AD85, AW85	Lawn Mowers	4	Ver	1	2⅝x2	8.40	6.00	L	3.00-3600	2.75-3600	4.50-2600	41	Y	Av	Mag	Car	CTZ	G	BR
Cushman Husky-M6	General Purpose	4	Ver	1	2¾x2⅝	12.30	4.70	L	3.00-3000	2.60-3000	5.20-2000	65	Y	Fb	Mag	Car	Til	G	R
Husky-M7	General Purpose	4	Ver	1	2¾x2⅝	14.90	5.40	L	4.50-3000	3.80-3000	7.90-2000	65	Y	Fb	Mag	Car	Til	G	R
Husky-M8	General Purpose	4	Ver	1	2¾x2⅝	17.80	5.90	L	5.00-3000	4.30-3000	9.50-2000	65	Y	Fb	Mag	Car	Til	G	R
Husky-M9	General Purpose	4	Ver	1	3x2¾	20.30	6.60	. . .	7.00-3600	5.60-	11.90-2600	65	Y	Fb	Mag	Car	Til	G	BPE
Gladden 40	General Purpose	4	Ver	1	2½x3	14.70	4.50	L	4.30-3200	4.30-3200	8.40-2200	79	Y	Fb	Mag	Car	MS	G,K	Rr
40M	Marine	4	Ver	1	2½x3	14.70	4.50	L	4.30-3200	4.30-3200	8.40-2200	80	Y	Fb	Mag	Car	MS	G	Rr
50	General Purpose	4	Ver	1	2½x3	14.70	5.70	L	5.25-3200	5.25-3200	9.20-2500	81	Y	Fb	Mag	Car	MS	G	Rr
75	General Purpose	4	Ver	1	2⅝x3	19.40	5.70	L	7.00-3200	7.00-3200	13.50-2200	83	Y	Fb	Mag	Car	MS	G,K	Rr
75ES	General Purpose	4	Ver	1	2⅝x3	19.40	5.70	L	6.50-3200	6.50-3200	11.80-3200	136	N	. . .	Mag	Car	MS	G	Ele
75M	Marine	4	Ver	1	2⅝x3	19.40	5.70	L	7.00-3200	7.00-3200	11.80-3200	86	N	. . .	Mag	Car	MS	G	Rr
75MES	Marine	4	Ver	1	2⅝x3	19.40	5.70	L	6.50-3200	6.50-3200	11.00-3200	138	N	. . .	Mag	Car	MS	G	Ele
MC	Motorcycle	4	Ver	1	2⅝x3	19.40	6.00	L	9.50-5000	9.00-4600	12.30-3000	65	N	. . .	Mag	Car	Am	G	Pe
Gravely L	Af	4	Ver	1	3¼x3½	29.00	5.00	T	5.00-2400	4.00-1800	15.00-1000	275	Opt	. . .	Mag	Car	Zen	G	BP
Homelite 17	Chain Saws	2	Ver	1	2x1⅝	4.33	. . .	. . .	3.50-5800	3.50-5800	. . .	22	Y	Av	Mag	Car	O-T	G	Hc
5-20	Chain Saws	2	. . .	1	2⅛x1½	5.00	. . .	. . .	5.00-6000	5.00-6000	. . .	20	Y	Av	Mag	Car	O-T	G	Hc
20	GS, Pu, Cs, Bl	2	Ver	1	2⅝x1½	6.70	5.50	(c)	3.50-3600	3.50-3600	. . .	20	Y	Va	Mag	Car	Til	G,K	Hc
5-30N	Chain Saws	2	Ver	1	2⅛x1½	6.97	6.00	(c)	5.50-5200	5.50-5200	. . .	29	Y	Ce	Mag	Car	Til	G	Hc
23	GS, Pu, Bl	2	Ver	1	2¼x2⅛	8.40	5.50	(c)	4.00-3600	4.00-3600	. . .	30	Y	Va	Mag	Car	Own	G,K	Hc
24	General Purpose	2	Ver	1	2⅝x2⅛	11.40	5.50	(c)	6.00-3600	6.00-3600	. . .	40	Y	Va	Mag	Car	O-Z	G,K	Hc
32	Generator Sets	2	Ver	1	3x3	21.21	5.50	(c)	10.00-3600	. . .	. . .	125	Y	Va	Mag	Car	Own	G,K	Hc
Jacobsen J-100	Lawn Mowers	2	Hor	1	2x1½	4.70	5.50	. . .	1.80-3600	1.63-3600	2.63-3600	19½	Y	Av	Mag	Car	Til	G	Rc
J-100E	Lawn Mowers	2	Hor	1	2x1½	4.71	5.50	. . .	1.80-3600	1.63-3600	2.63-3600	26	Y	Av	Mag	Car	Til	G	Ele
J-100V	Lawn Mowers	2	Ver	1	2x1½	4.70	5.50	. . .	1.80-3600	1.63-3600	2.63-3600	19½	Y	Av	Mag	Car	Til	G	Rc
J-100VE	Lawn Mowers	2	Ver	1	2x1½	4.71	5.50	. . .	1.80-3600	1.63-3600	2.63-3600	26	Y	Av	Mag	Car	Til	G	Ele
J-200	Lawn Mowers	2	Hor	1	2x2	6.28	5.66	. . .	2.43-3600	2.20-3600	3.55-3600	46	Y	Av	Mag	Car	Til	G	Rc
J-200E	Lawn Mowers	2	Hor	1	2x2	6.28	5.66	. . .	2.43-3600	2.20-3600	3.55-3600	56	Y	Av	Mag	Car	Til	G	Ele
J-200V	Lawn Mowers	2	Ver	1	2x2	6.28	5.66	. . .	2.43-3600	2.20-3600	3.55-3600	46	Y	Av	Mag	Car	Til	G	Rc
J-200VE	Lawn Mowers	2	Ver	1	2x2	6.28	5.66	. . .	2.43-3600	2.20-3600	3.55-3600	56	Y	Av	Mag	Car	Til	G	Ele
J-225SV	Lawn Mowers	2	Ver	. . .	2¼x2	7.52	5.60	. . .	3.77-3600	3.40-3600	5.50-3600	48	. . .	. . .	. . .	Car	Til	G	Rc
J-225SVE	Lawn Mowers	2	Ver	. . .	2¼x2	7.52	5.60	. . .	3.77-3600	3.40-3600	5.50-3600	58	. . .	. . .	. . .	Car	Til	G	Ele
Kohler K90	General Purpose	4	Ver	1	2¾x2	8.86	6.00	L	3.60-3600	3.10-3600	5.60-3000	41	Y	Fb	Mag	Car	Cart	G,K	Rr
K160	General Purpose	4	Ver	1	2⅞x2½	16.22	6.00	L	6.80-3600	5.40-3600	11.20-2400	67	Y	Fw	Mag	Car	Cart	G,K	ER
K330	General Purpose	4	Ver	1	3⅝x3¼	33.60	6.50	L	12.50-3200	10.60-3200	21.40-2200	175	Y	Fw	Mag	Car	Cart	G	ER
K660	General Purpose	4	Op	2	3⅝x3¼	67.20	6.00	L	26.80-3600	22.70-3600	43.80-1800	230	Y	Fw	Mag	Car	Cart	G,NgG	HE
Lauson R	Lm, Pu	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	37	Y	Fb	Mag	Car	Til	G	R
55A-400, 55A-420	General Purpose	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	33	Y	Fb	Mag	Car	Til	G	R
RSH-737, 55AB-600	General Purpose	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	28	Y	Fb	Mag	Car	Til	G	R
RSH-760	General Purpose*	4	Ver	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	43	Y	Fb	Mag	Car	Til	G	R
V-1	Lawn Mowers	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	31	Y	Fb	Mag	Car	Til	G	R
RSV-800	Lawn Mowers	4	Hor	1	2x1⅞	5.90	5.80	L	2.00-3600	1.50-3600	2.90-3600	33	Y	Fb	Mag	Car	Til	G	R
SLV	Lawn Mowers	4	Hor	1	2⅛x1⅝	6.29	6.20	L	2.00-3600	1.60-3600	2.90-3600	19½	Y	Av	Mag	Car	MS	G	R
VA	Lawn Mowers	4	Hor	1	2⅛x1⅝	7.35	6.20	L	2.50-3600	2.00-3600	3.60-3600	19½	Y	Av	Mag	Car	MS	G	R
TLV-900	Lawn Mowers	4	Hor	1	2¼x2¼	8.95	5.80	L	3.00-3200	2.50-3200	4.70-3200	58	Y	Fb	Mag	Car	Til	G	R
TLH-725	General Purpose	4	Ver	1	2¼x2½	8.95	5.80	L	3.30-3600	2.70-3600	4.80-3600	52	Y	Fb	Mag	Car	Til	G	R
TLH-661	General Purpose*	4	Ver	1	2¼x2¼	8.95	5.80	L	3.30-3600	2.70-3600	4.80-3600	65	Y	Fb	Mag	Car	Til	G	R
P-25	General Purpose	4	Ver	1	2⅞x2⅝	17.85	6.30	L	6.30-3600	5.50-3600	9.50-3000	85	Y	Fb	Mag	Car	Til	G	R
P-27	General Purpose*	4	Ver	1	2⅞x2⅝	17.85	6.30	L	6.30-3600	5.50-3600	9.50-3000	103	Y	Fb	Mag	Car	Til	G	R

For Directory of the Engine Manufacturers listed above, see page 286

Continued on page 284

GASOLINE ENGINES 1956



★ ★ ★ ★ TRUCKS • BUSES • TRACTORS

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Allis-Chalmers B-125	Tr,Ind	4-3⅝x3½	33.7-1900	31.7-1900	125.2	6.25	92-1300 (EA)	W	In	I	SII	1.43	1.31	1.26	1.03	.360	.360	.341	.341
2	..... W-226	Tr,Ind	4-4x4½	63-1800	58.7-1800	226.0	6.45	193-1000 (EA)	W	In	I	SII	1.69	1.50	1.50	1.32	.376	.360	.372	.372
3	..... 4B-153	Tr,Ind	4-3⅞x4½	47-2800	42-2800	153.0	6.00	112-1500 (BE)	N	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
4	..... 4B-182	Tr,Ind	4-3¾x4½	54-2800	49-2800	182.0	5.54	140- 800 (BE)	N	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
5	..... 6B-230	Tr,Ind	6-3⅞x4½	72-3000	65-3000	230.0	6.00	168-1000 (BE)	W	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
6	..... 6B-273	Tr,Ind	6-3¾x4½	82-2800	75-2800	273.0	5.40	204-1200 (BE)	N	In	I	2112	1.50	1.28	1.37	1.12	.429	.429	.312	.312
7	..... HP-326	Tr,Ind	6-3⅞x4½	78-2400	66-2400	326.0	5.40	220-1100 (BE)	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
8	..... HP-351	Tr,Ind	6-4⅛x5½	84-2400	71-2400	351.0	5.83	232- 900 (BE)	N	In	L	2112	1.65	1.53	1.50	1.37	.344	.344	.372	.372
9	..... K-426	Tr,Ind	6-4⅝x4¾	107-2400	95-2400	426.0	5.33	276-1100 (BE)	N	In	L	2112	1.90	1.76	1.75	1.62	.400	.400	.372	.372
10	..... L-525	Tr,Ind	6-4½x5½	113-2400	94-2400	525.0	4.75	340- 900 (BE)	N	In	L	2112	1.90	1.76	1.75	1.62	.400	.400	.372	.372
11	..... LO-525	T,Tr,Ind	6-4½x5½	157-2400	139-2400	525.0	5.00	400-1200 (BE)	N	In	L	2112	1.98	1.68	1.75	1.50	.468	.468	.372	.372
12	..... 6-MO-883	T,Ind,M	6-5½x6	199-2000	170-2000	883.0	5.50	670-1000 (BE)	W	In	I	2112	2.45	2.02	2.19	1.75	.540	.540	.435	.433
13	..... 6-MO-970	T,Ind,M	6-5½x6½	200-1800	171-1800	970.0	5.43	720- 800 (BE)	W	In	I	2112	2.45	2.02	2.19	1.75	.540	.540	.435	.433
14	..... 8-MO-1290	Ind	8-5½x6½	293-1800	248-1800	1290.0	5.43	1000-1100 (BE)	W	In	I	CNS	2.45	2.02	2.19	1.75	.540	.540	.435	.433
15	..... PC-1879	Ind	8-6⅝x8¼	232-1000	197-1000	1879.0	6.00	1300- 800 (BE)	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.558	.558
16	..... PCG-1879	Ind	8-6⅝x8¼	232-1000	197-1000	1879.0	6.00	1300- 800 (BE)	W	In	I	2112	2.71	2.53	2.50	2.28	.703	.703	.558	.558
17	..... 8PC-2505	Ind	8-6⅝x8¼	358-1200	320-1200	2505.0	6.00	1860- 750 (BE)	W	In	I	CNS	2.71	2.53	2.50	2.28	.703	.703	.558	.558
18	..... 8PCS-2505	Ind	8-6⅝x8¼	465-1200	420-1200	2505.0	8.27	2110- 950 (BE)	W	In	I	CNS	2.71	2.53	2.50	2.28	.703	.703	.558	.558
19	..... 8MOS-1290	Ind	8-5½x6½	400-2100	360-2100	1290.0	8.70	1170-1100 (BE)	W	In	I	2112	2.45	2.02	2.19	1.75	.540	.540	.435	.433
20	Arnelt ..... DDT	M	4-2½x3½	.....	20.2-2800	61.0	5.80	38-2800 (EA)	N	Se	I	2142	1.13	.938	.....	.....	.....	.....	.313	.313
21	Brennan 20	Ind	4-2⅝x3½	20-3900	15-3900	80.0	7.40	34-3200 (EA)	N	Se	L	SII	1.12	1.00	.875	.875	.250	.250	.312	.312
22	..... Imp.	M	4-2⅝x3½	25-4000	20-4000	80.0	7.40	34-3200 (EA)	N	Se	I	SII	1.12	1.00	.875	.875	.250	.250	.312	.312
23	 75	T,In	6-3¼x4½	90-3500	75-3300	230.3	6.70	175-1000 (EA)	N	In	L	SII	1.50	1.50	1.37	1.25	.343	.343	.312	.312
24	.....	M	6-3¼x4½	95-3200	82-3200	230.3	5.50	184-1250	N	In	L	SII	1.50	1.37	1.37	1.25	.343	.343	.312	.312
25	..... CE	Ind	4-4½x5	54-1600	45-1600	318.0	5.00	203-1000 (EA)	N	Se	L	SII	2.00	2.00	1.87	1.87	.375	.375	.375	.375
26	..... E-4	M	4-4½x5	54-1600	45-1600	318.0	8.00	203-1000 (EA)	N	Se	L	SII	2.00	2.00	1.87	1.87	.375	.375	.375	.375
27	..... B-70	T,B,Tr,Ind	6-4x5½	90-2000	75-2000	415.0	4.50	278- 900 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
28	 100	M	6-4x5½	94-2000	80-2000	415.0	6.00	278- 900 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
29	..... B-100	T,B,Tr,Ind	6-4⅛x5½	94-2000	80-2000	498.0	4.50	350-1200 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
30	 125	M	6-4⅛x5½	110-2200	94-2200	498.0	6.00	350-1200 (EA)	N	Se	I	SII	2.12	2.12	2.00	2.00	.375	.375	.437	.437
31	 150	M	6-4½x6½	130-2000	130-2000	620.3	6.00	500-1200 (EA)	N	Se	I	SII	2.50	2.50	2.12	2.12	.437	.437	.500	.500
32	Chevrolet ..... Thriftmaster	T	6-3⅞x3⅝	140-4200	123-4000	235.5	8.00	210-2000 (BE)	N	In	I	HAS	1.88	1.51	1.44	1.28	.390	.390	.341	.341
33	..... Thriftmaster Special	T	6-3⅞x3⅝	140-4200	120-3800	235.5	8.00	210-2000 (BE)	N	In	I	HAS	1.88	1.51	1.44	1.28	.390	.390	.341	.341
34	..... Thriftmaster Heavy Duty	T	6-3⅞x3⅝	140-4200	123-4000	235.5	8.00	210-2000 (BE)	N	In	I	HAS	1.88	1.51	1.44	1.28	.390	.390	.341	.341
35	..... Jobmaster	T	6-3⅞x3⅝	148-4000	125-3800	261.0	7.80	232-2000 (BE)	N	In	I	HAS*	1.88	1.51	1.44	1.28	.390	.390	.341	.341
36	..... Trademaster	T	8-3⅝x3	155-4200	132-3800	265.0	7.50	249-2200 (BE)	N	In	I	HAS	1.72	1.51	1.40	1.34	.334	.334	.341	.341
37	..... Taskmaster	T	8-3⅝x3	155-4200	132-3800	265.0	7.50	249-2200 (BE)	N	In	I	HAS***	1.72	1.51	1.40	1.34	.334	.334	.341	.341
38	..... Loadmaster	T	8-4x3⅛	195-4000	170-4000	322.0	7.70	316-2200 (BE)	N	In	I	HAS***	1.75	1.38	.....	.....	.378	.378	.372	.370
39	Chris-Craft ..... A, *B	M	4-3½x4	.....	80-3200	132.7	7.50	106-2400 (EA)	N	In	L	2112N	1.48	1.36	1.25	1.12	.312	.312	.310	.310
40	..... *K	M	6-3½x4½	.....	95-3200	229.7	7.35	173-1800 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.311	.311	.310	.310
41	..... *KL	M	6-3½x4¼	.....	105-3200	236.6	7.52	190-2200 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.311	.311	.310	.310
42	..... KLC	M	6-3½x4¼	.....	120-3800	236.6	7.52	175-3000 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.344	.344	.310	.310
43	..... KBL	M	6-3½x4¼	.....	131-3800	236.6	7.52	191-3000 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.344	.344	.310	.310
44	..... *M	M	6-4x4¼	.....	130-3000	320.4	7.50	239-2400 (EA)	N	In	L	2112N	1.83	1.66	1.81	1.50	.356	.356	.372	.372
45	..... *ML	M	6-4x4¼	.....	145-3000	339.2	6.88	267-2400 (EA)	N	In	L	Eat	1.83	1.66	1.81	1.50	.356	.356	.372	.372
46	..... MBL	M	6-4x4¼	.....	158-3400	339.2	6.86	266-2600 (EA)	N	In	L	Eat	1.83	1.66	1.81	1.50	.387	.387	.372	.372
47	..... *W	M	6-4½x4¾	.....	160-3000	404.3	6.40	322-1500 (EA)	N	In	L	2112N	1.92	1.76	1.87	1.68	.388	.388	.372	.372
48	..... *WB	M	6-4½x4¾	.....	200-3200	404.3	6.48	354-1600 (EA)	N	In	L	2112N	1.92	1.76	1.87	1.68	.442	.442	.372	.372
49	Chrysler M44-S	M	8-3⅞x3¼	.....	150-3800	260.0	7.20	228-2200 (EA)	N	In	I	SII*	1.75	1.41	1.64	1.36	.251	.250	.372	.434
50	..... M45-S	M	8-3⅞x3¼	.....	200-3800	331.1	7.20	298-2600 (EA)	N	In	I	SII*	1.94	1.75	1.83	1.72	.250	.250	.372	.433
51	..... M48 Ace	M	6-3¾x4⅝	.....	.....	230.0	6.60	187-1400	N	In	L	SII	1.53	1.41	1.41	1.28	.375	.375	.340	.340
52	..... M48-S Ace Spec	M	6-3¾x4⅝	.....	110-3800	230.2	7.00	190-1600	N	In	L	SII	1.53	1.41	1.41	1.28	.375	.375	.340	.340
53	..... M47 Crown	M	6-3⅞x4½	.....	110-3200	250.6	6.50	208-1400 (EA)	N	In	L	SII	1.72	1.53	1.44	1.38	.375	.375	.340	.340
54	..... M47 Crown Spec	M	6-3⅞x4½	.....	125-3600	250.6	7.00	208-1900 (EA)	N	In	L	SII(x)	1.72	1.53	1.44	1.38	.375	.375	.340	.434
55	..... M49 Majestic	M	8-4⅛x5⅛	.....	160-3000	413.0	6.50	350-1600	N	In	L	SII(x)	1.94	1.75	1.79	1.59	.410	.379	.371	.434
56	..... Ind. 30	Ind	6-3¾x4⅝	99-3600	73-2800	230.0	7.00	190-1200 (BE)	N	In	L	XCR	1.54	1.41	1.23	1.29	.379	.379	.340	.340
57	..... Ind. 31	Ind	6-3¾x4⅝	99-3600	73-2800	220.0	7.00	190-1200 (BE)	N	In	L	XCR	1.54	1.41	1.23	1.29	.379	.379	.340	.340
58	..... Ind. 32	Ind	6-3⅞x4⅝	120-3600	88-2800	265.0	6.80	225-1200 (BE)	N	In	L	XCR	1.72	1.51	1.44	1.38	.379	.379	.341	.340
59	..... Ind. 33	Ind	6-3⅞x4⅝	120-3600	88-2800	265.0	6.80	225-1200 (BE)	N	In	L	XCR	1.72	1.51	1.44	1.38	.379	.379	.341	.340
60	..... Ind. 56	Ind	8-3⅛x3⅝	163-4000	132-3000	331.1	7.50	306-2000 (BE)	N	In	I	SII**	1.94	1.76	1.80	1.64	.254	.238	.373	.372
61	Climax R41	Ind	4-6x7	123-1200	112-1200	791.6	4.70	525- 750 (EA)	N	Se	I	SII	2.50	2.50	2.25	2.25	.500	.500	.562	.562
62	..... R61	Ind	6-6x7	183-1200	165-1200	1187.4	4.70	802- 700 (EA)	N	Se	I	SII	2.50	2.50	2.25	2.25	.500	.500	.562	.562
63	..... K-67	Ind	6-7x7	284-1200	250-1200	1616.0	5.20	1220- 850 (BE)	W	Se	I	SII	2.75	2.62	2.50	2.38	.687	.687	.562	.562
64	..... K-75	Ind	6-7⅛x7	304-1200	280-1200	1655.0	5.56	1420- 850 (BE)	W	Se	I	SII	2.75	2.63	2.50	2.38	.688	.688	.563	.563
65	..... V-90	Ind	8-7x7	340-1200	320-1200	2155.0	5.20	1600- 800 (BE)	W	Se	I	SII	2.81	2.68	2.50	2.37	.687	.687	.562	.562
66	..... V-85	Ind	8-7⅛x7	390-1200	370-1200	2474.0	5.56	1875- 800 (BE)	W	Se	I	SII	2.76	2.63	2.50	2.38	.687	.687	.562	.562
67	..... V-122	Ind	12-7x7	495-1200	445-1200	3232.0	5.20	2460- 750 (BE)	W	Se	I	SII	2.81	2.68	2.50	2.37	.687	.687	.562	.562
68	..... V-125	Ind	12-7⅛x7	505-1200	545-1200	3711.0	5.56	2900- 850 (BE)	W	Se	I	SII	2.76	2.63	2.50	2.38	.687	.687	.560	.560
69	Continental N-4062	Tr	4-2⅝x3½	26.3-3500	.....	62.0	6.60	41-2500 (BE)	N	In	L	Op	.895	.895	.750	.750	.187	.187	.314	.312
70	..... N-56	Ind	4-2¼x3½	14.2-2200	.....	56.0	6.80	39.5-1200 (BE)	W	....	L	Op	1.00	.895	.....	.....	.....	.....	.315	.313
71	..... N-62	Ind	4-2⅝x3½	15-2200	.....	62.0	6.46	43-1400 (BE)	N	In	L	Op	.895	.895	.750	.750	.187	.187	.314	.312
72	..... Y-69	Ind	4-2½x3½	21.4-2400	.....	69.0	6.60	48-2000 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
73	..... Y-4069	Tr	4-2½x3½	28-3500	.....	69.0	.....	51-2000 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
74	..... Y-91	Ind	4-2⅝x3½	28.5-2400	.....	91.0	6.60	67-1800 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
75	..... Y-4091	C,Tr	4-3⅛x3½	38.3400	.....	91.0	.....	70-1600 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313
76	..... E281	Ind	4-3⅝x4½	68.5-2400	.....	201.0	6.30	171-1200 (BE)	W	In	I	SII	1.45	1.36	1.16	1.19	.230	.230	.341	.339
77	..... F244	Ind	6-3⅞x4½	79-2400	.....	244.0	6.90	192-1200 (BE)	N	In	L	XCR	1.52	1.21	1.38	1.19	.329	.334	.341	.339
78	..... J382	Ind	4-4½x6	78-1500	.....	382.0	5.82	283-1000 (BE)	W	In	I	SII	1.77	1.65	1.63	1.50	.249	.249	.435	.433
79	..... Y-112	Ind	4-3⅞x3½	32-2400	.....	112.0	6.60	62-1400 (BE)	N	In	L	Op	1.20	1.01	1.06	.875	.296	.281	.314	.313

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

MARINE • INDUSTRIAL

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats													Crank-Pin	MAIN BEARINGS												
Angle (Deg.)	Inserts Used?	Insert Materia (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure Is—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. No.)	Line Number
45	N	TP	HG	Al	25	.813x2.87	4	1040	6½	29	1045	N	1.93x1.22	3	2.25x1.62	2.25x1.50	adfg	Zen	7/8	370	16 1/16	31 5/16	25 5/16	5	1
45	E	TP	HG	Al	31	.99x3.51	4	1040	7½	42	5046	N	2.38x1.54	3	2.44x1.62	2.48x1.75	acdf	MaS	1	545	16¼	31 1/16	33½	4	2
45	N	.....	HG	CI	.....	1.00x2.84	4	CS	7⅝	.....	1045	N	2.00x1.31	3	2.50x1.25	2.50x1.75	abcdfg	Zen	1	500	18 1/16	26 5/16	30 1/16	2,3,4	3
45	N	.....	HG	CI	.....	1.00x3.09	4	CS	7⅝	.....	1045	N	2.00x1.31	3	2.50x1.25	2.50x1.75	abcdfg	Zen	1¼	820	18 1/16	26 5/16	30 1/16	2,3,4	4
45	N	.....	HG	CI	.....	1.00x	4	1045	7⅝	.....	1045	N	2.00x1.31	7	2.50x1.25	2.50x1.75	abcdfg	Zen	1	625	18 1/16	26 5/16	38 1/16	2,3,4	5
45	N	.....	HG	CI	.....	1.00x3.09	4	1045	7⅝	.....	1045	N	2.00x1.31	7	2.50x1.25	2.50x1.75	abcdfg	Zen	1¼	835	18 1/16	26 5/16	38 1/16	2,3,4	6
45	E	DC	HG	CI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcdg	Zen	1½	885	25¼	33 1/16	39 1/16	2,3,1	7
45	E	DC	HG	CI	42	1.12x3.25	4	CS	9½	42	CS	N	2.12x1.62	7	3.00x1.50	3.00x2.12	abcdg	Zen	1½	905	25¼	33 1/16	39 1/16	2,3,1	8
45	E	DC	HG	Al	68	1.25x3.82	4	CS	9½	68	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdg	Zen	1¾	905	25¼	30 1/16	47 1/16	2,3,1	9
45	E	DC	HG	CI	88	1.25x3.81	4	CS	11	66	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdg	Zen	1¾	950	25¼	33 1/16	47 1/16	2,3,1	10
30	E	Jad	HG	Al	88	1.25x3.81	5	AS	11	78	CS	N	2.37x1.75	7	3.00x1.75	3.00x2.50	abcdfg	Zen	1¾	1195	27 1/16	38 1/16	49 5/16	2,3,1	11
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	N	3.30x2.12	7	3.89x3.00	3.89x2.25	abcdfg	Zen	2	2400	28½	48¼	58½	0,1	12
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	N	3.30x2.12	7	3.89x3.75	3.89x2.25	abcdfg	Zen	2	2400	48¼	58½	58½	0,1	13
30	E	DC	HG	CI	212	1.75x4.75	5	1040	12½	171	1045	.....	3.30x2.12	9	3.89x2.25	3.89x2.25	abcdefg	Zen	2½	3200	32	49½	78	0	14
30	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	1045	N	4.25x3.25	7	4.50x2.68	3.75x3.48	abcdfg	Zen(2)	2	9000	48	48 1/16	86 1/16	00,0	15
45	E	DC	HG	Ala	263	2.75x5.53	5	CS	17¾	430	1045	N	4.25x3.25	7	4.50x2.68	3.75x3.48	abcdfg	Ens	2	9000	48	68 1/16	86 1/16	00,0	16
45	E	DC	HG	Al	263	2.75x5.53	5	1035	17¾	430	1045	N	4.33x3.25	9	4.68x2.68	4.68x2.68	abcdefg	Ens	3½	11200	108½	47 1/16	74 1/16	00,0	17
45	E	DC	HG	Al	263	2.75x5.53	5	1035	17¾	430	1045	N	4.33x3.25	9	4.68x2.68	4.68x2.68	abcdefg	Ens	3½	12000	112¾	47 1/16	74 1/16	00,0	18
30	E	4140	HG	Al	181	1.75x4.75	5	1040	12½	171	1045	.....	3.31x2.13	9	3.89x2.25	3.89x2.25	abcdefg	Ens	3½	3375	32⅝	49 1/16	78	0	19
.....	N	.....	SG	Al	.....	.625x.875	2	1015	6	.....	1045	.....	1.56x1.25	2	1.38x2.83	.....	d	Zen	.....	281	16	16 5/16	29 5/16	.....	20
45	N	.....	HG	Al	6	.625x2.00	3	1045	5¾	14	1045	Y	1.31x1.25	3	2.50x1.50	2.50x1.50	abcdg	Til	5/8	128	12¾	17 5/16	18¾	.....	21
45	N	.....	HG	Al	6	.625x2.00	3	1045	5¾	14	1045	N	1.31x1.25	3	2.50x1.50	2.50x1.50	abcdg	Til	1/2	165	12¾	17 5/16	29	.....	22
45	Y	TS	Ch	Al	23	.875x2.75	4	2320	7¾	29	1045	Y	2.06x1.25	4	2.50x1.87	2.50x1.87	acdg	Str	1¼	710	18¾	22	37½	.....	23
45	E	TS	Ch	Al	23	.875x2.75	4	2320	7¾	29	1045	Y	2.06x1.25	4	2.50x1.87	2.50x1.75	acdg	Str	1¼	710	18¾	22	46½	.....	24
45	N	.....	HG	SS	80	1.17x4.00	4	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcdg	Str	1¼	800	21	29¾	37½	.....	25
45	N	.....	HG	SS	72	1.17x4.00	5	1045	11	64	1045	N	2.50x2.50	3	2.50x4.25	2.50x3.50	abcdfg	Str	1¼	950	16	18	53	.....	26
45	N	.....	HG	SS	64	1.17x3.87	4	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	acdg	Str	1½	800	25¼	33¾	49	.....	27
45	N	.....	HG	SS	64	1.17x3.87	4	AS	.....	.....	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	abcdfg	Str	1½	800	19¾	24¾	65	.....	28
45	N	.....	HG	SS	76	1.25x3.87	5	CNS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x3.00	acdg	Str	1½	875	25¼	33¾	49	.....	29
45	N	.....	HG	SS	70	1.25x3.87	5	AS	11	65	CNS	N	2.50x2.00	3	2.75x4.50	2.75x4.50	abcdfg	Str	1½	900	19¾	24¾	65	.....	30
45	N	.....	BG	SS	72	1.37x4.00	5	AS	12	80	CNS	Y	2.62x2.67	7	2.62x5.00	2.63x3.50	abcd	Str	1¾	1450	20	30	74	.....	31
(i)	N	.....	HG	Ala	25.0	.866x3.19	3	DFS	6 1/16	28	DFS	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	R-P	1½	608	21 1/16	28¼	39½	.....	32
(i)	N	.....	HG	Ala	25.0	.866x3.19	3	DFS	6 1/16	28	DFS	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	Car	1½	630	21 1/16	28¼	39½	.....	33
(i)	N	.....	HG	Ala	25.0	.866x3.19	3	DFS	6 1/16	28	DFS	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	R-P	1½	614	21 1/16	28¼	39½	.....	34
(i)	N	.....	HG	Ala	30.0	.927x3.38	3	DFS	6 1/16	32	DFS	.....	2.31x1.25	4	2.69x1.06	2.78x1.19	abcdfgi	R-P	1½	616	21 1/16	30½	39½	.....	35
45	N	.....	Ch	Ala	26.0	.927x3.13	3	DFS	5 1/16	18	DFS	.....	2.00x1.90	5	2.30x.702	2.30x1.16	abcdfgi	R-P	1¼	592	29	34	34½	.....	36
45	N	.....	Ch	Ala	26.0	.927x3.13	3	DFS	5 1/16	18	DFS	.....	2.00x1.90	5	2.30x.702	2.30x1.16	abcdfgi	R-P11	1¼	601	29	34	34½	.....	37
45	N	.....	Ch	Al	29.0	.940x3.40	3	DFS	6	31	DFS	.....	2.25x2.00	5	2.50x1.25	2.50x1.77	abcdfgi	R-P11	1¼	718	.....	.....	.....	.....	38
30	N	.....	HG	Alt	21	.750x2.83	3	3140	6 1/16	22	Steł	N	1.75x1.12	3	1.96x1.62	1.96x1.37	acr	Zen	1¼	456*	24 1/16	21½	31 1/16	.....	39
30	N	.....	HG	Ala	25	.875x2.92	3	1035	7	29	Steł	N	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	626*	24 1/16	24	40	.....	40
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	29	Steł	Y	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	626*	25 1/16	24 1/16	40	.....	41
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	29	Steł	Y	1.98x1.25	7	2.49x1.53	2.49x1.15	adr	Zen	1¾	626*	27	24 1/16	40	.....	42
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	29	Steł	Y	1.98x1.25	7	2.49x1.53	2.49x1.15	acdr	Zen	1½	626*	24 1/16	31 1/16	40	.....	43
30	N	.....	HG	Ala	38	1.00x3.52	3	1040	8	40	Steł	N	1.98x1.50	7	2.49x1.74	2.49x1.15	acr	Zen	1¾	850*	26 1/16	25 1/16	46 1/16	.....	44
30	N	.....	HG	Ala	40	1.12x3.44	3	1040	8	40	Steł	Y	1.98x1.50	7	2.49x1.74	2.49x1.15	acr	Zen	2	850*	26 1/16	25 1/16	46 1/16	.....	45
30	N	.....	HG	Ala	40	1.12x3.44	3	1040	8	40	Steł	Y	1.98x1.50	7	2.49x1.74	2.49x1.15	acr	Zen	2	850*	26 1/16	25 1/16	46 1/16	.....	46
30	N	.....	HG	Alt	44	1.12x3.70	4	3140	6 1/16	52	Steł	Y	2.24x1.50	7	2.62x2.21	2.62x1.43	acar	Zen	2	1232*	26 1/16	27 1/16	53 1/16	.....	47
30	N	.....	HG	Atn	44	1.31x3.62	4	3140	6 1/16	56	Steł	.....	2.25x1.50	7	2.62x2.21	2.62x1.43	acdr	Zen(2)	1¾	1260*	27 1/16	27 1/16	53 1/16	.....	48
45	E	*	HG	Ala	16.2*	.859x2.89	3	MA	5 1/16	21.2	1046	.....	1.94x1.81	5	2.38x1.81	2.38x1.06	acdfg	Car	.....	1060*	32 1/16	30 1/16	44 1/16	.....	49
45	E	*	HG	Als	20.8*	.984x3.15	3	MA	6 1/16	25.2	DFS	.....	2.25x2.00	5	2.50x1.88	2.50x1.13	acdef	Car	1½	1103*	32 1/16	30 1/16	46 1/16	N	50
45	E	CMT	HG	Alt	15.7	.859x2.75	4	MS	7 1/16	30.1	DFS	Y	2.06x1.25	4	2.50x1.88	2.50x1.24	acdg	Zen	1¼	.....	22 1/16	25 1/16	43 1/16	4	51
45	E	CMT	HG	Alt	15.7	.859x2.75	4	MS	7 1/16	30.1	DFS	Y	2.06x1.25	4	2.50x1.88	2.50x1.24	acdg	Zen	1½	.....	22 1/16	25 1/16	43 1/16	4	52
45	E	CMT	HG	Alt	25.0	.859x2.88	4	MS	7.875	32.4	DFS	Y	2.12x1.22	4	2.50x1.8	2.50x1.24	acdg	Zen	1½	.....	22 1/16	26 1/16	45 1/16	4	53
45	E	CMT	HG	Alt	25.0	.859x2.88	4	MS	7.875	32.4	DFS	Y	2.12x1.22	4	2.50x1.88	2.50x1.24	acdg	Zen(2)	1½	.....	28	26 1/16	45 1/16	4	54
45	Be	Sil*	HG	Alt	33.5	1.13x3.46	4	MS	8 1/16	39.8	DFS	Y	2.31x1.62	7	3.00x2.93	3.00x1.72	acdg	Zen(2)	1½	.....	26 1/16	32 1/16	58 5/16	4	55
45	E	Ste	Ch	CI	32.9	.859x2.75	4	1335	7¾	29.4	1046	.....	2.06x1.25	4	2.50x1.44	2.50x1.88	abcdg	Car	1 1/16	575	20	34 1/16	32 1/16	4	56
45	E	Ste	HG	CI	32.9	.859x2.75	4	1335	7¾	29.4	1046	.....	2.06x1.25	4	2.50x1.44	2.50x1.88	abcdeg	Car	1 1/16	575	20	34 1/16	32 1/16	4	57
45	E	Ste	Ch	CI	35.6	.859x2.87	4	1335	7¾	33.3	1046	.....	2.13x1.38	4	2.50x1.59	2.50x1.88	abcdg	Car	1 1/16	740	20	28 1/16	33 1/16	3,4	58
45	E	Ste	HG	CI	35.6	.859x2.87	4	1335	7¾	33.3	1046	.....	2.13x1.38	4	2.50x1.59	2.50x1.88	abcdeg	Car	1 1/16	740	20	28 1/16	33 1/16	3,4	59
45	E	St	Ch	Alt	28.0	.984x3.15	3	.....	6 5/16	25.2	DFS	.....	2.25x2.00	5	.....	.....	abcdg	Str	1 1/16	.....	28 1/16	34 1/16	32 5/16	.....	60
45	E	Nic	HG	Al	153	1.49x5.37	4	3135	16	244	4140	N	3.00x3.50	3	3.25x3.81	3.25x4.50	acdfg	Zen	2	2300	31 1/16	49 1/16	57 1/16	1,0	61
45	E	Nic	HG	Al	153	1.49x5.37	4	3135	16	244	4140	Y	3.00x3.50	4	3.25x3.81	3.25x4.50	acdfg	Zen(2)	1¾	3200	29 1/16	51 5/16	73 1/16	1,0	62
45	E	Nic	HG	Al	176	2.00x5.75	5	1040	16	279	4140	N	4.00x2.88	7	4.50x3.75	4.50x3.75	abcdfg	Zen	2½	5600	33	57	77 1/16	0	63
45	E	Nic	HG	Al	256	2.00x6.25	5	1040	16	279	4140	N	4.00x2.88	7	4.50x3.75	4.50x3.75	abcdfg	Zen	2½	5400	33	57	77 1/16	0	64
45	E	Nic	HG	Al	176	2.00x5.75	5	3135	16	276	4140	N	4.00x5.00	5	4.50x3.75	4.50x5.50	abcdfg	Zen(2)	2	8200	51	58	72¼	00	65
45	E	Nic	HG	Al	256	2.00x6.25	5	1040	16	279	4140	N	4.00x5.00	5	4.50x3.75	4.50x5.50	abcdfg	Zen(2)	2	8400	51	55	99	00	66
45	E	Nic	HG	Al	176	2.00x5.75	5	3135	16	276	4140	N	4.00x5.00	7	4.50x3.75	4.50x5.50	abcdfg	Zen(4)	2	11200	51	55	95	00	67
45	E	Nic	HG	Al	256	2.38x6.25	5	1040	16	368	4140	N	4.75x5.25	7	5.50x3.75	5.50x5.00	abcdfg	Zen(4)	2	11600	51	58½	96 1/16	00	68
(h)	E	SA	HG	CI	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.02	.....	2.00x	2.00x1.25	.....	.....	.....	170	16	19	19	5	69
(h)	E	SA	HG	Al	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	70
(h)	Op	SA	HG	CI	.....	.543x1.92	3	1035	5¾	.....	DFS	N	1.50x1.00	.....	2.00x1.38	2.00x1.25	.....	Op	Op	170	16	19	19	5	71
(h)	Op	SA	HG	CI	.....	.708x2.06	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	265	14 1/16	22 1/16	25½	5	72
(h)	Op	SA	HG	CI	.....	.703x2.06	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	290	14 1/16	22 1/16	25½	5	73
(h)	Op	SA	HG	CI	.....	.708x2.44	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	265	14 1/16	22 1/16	25½	5	74
(h)	Op	SA	HG	CI	.....	.703x2.44	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.37	1.75x1.78	acdgt	Op	Op	290	14 1/16	22 1/16	25½	5	75
(h)	E	SA	HG	Al	.....	1.11x3.07	4	1035	8⅝	.....	1046	.....	2.25x1.56	3	2.81x1.34	2.81x1.56	acdfg	Op	.....	540	.....	.....	.....	N	76
(h)	E	SA	HG	Al	.....	.859x2.88	4	1035	7 1/16	.....	1045	.....	2.06x1.31	4	2.56x1.06	2.56x1.48	acd	Op	.....	.....	.....	.....	.....	4	77
(h)	E	SA	HG	Al	.....	1.50x3.72	4	1035	10½	.....	1049	.....	2.75x1.81	4	3.50x1.88	3.50x2.00	afg	Op	.....	830	.....	.....	.....	N	78
(h)	Op	SA	HG	CI	.....	.708x2.75	3	1030	5¾	.....	DFS	N	1.50x1.18	3	1.75x1.29	1.75x1.65	acdgt	Op	Op	265	14 1/16	22 1/16	25½	5	79

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Continental—(Cont.)																			
1	F-124	Ind	4-3x4⅜	38.5-2400	.....	124.0	6.30	91-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.334
2	F-4124	C,T,Tr	4-3x4⅜	47-3200	.....	124.0	.....	94-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.281	.281	.341	.338
3	G-134	Ind	4-3½x4⅜	34-2000	.....	134.0	6.80	104-1000 (BE)	.....	.....	I	Op	.....	.....	.....	.....	.....	.....	.....	.....
4	F-140	Ind	4-3⅛x4⅜	42-2400	.....	140.0	6.40	106-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
5	F-4140	C,T,Tr	4-3⅛x4⅜	52-3200	.....	140.0	.....	106-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.281	.281	.341	.339
6	G-157	Ind	4-3⅝x4⅜	40.2-2000	.....	157.0	.....	120-1000 (BE)	W	In	I	Op	1.32	1.20	1.18	1.06	.312	.312	.341	.339
7	F-162	Ind	4-3⅞x4⅜	49-2400	.....	162.0	6.40	124-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
8	F-4162	C,T,Tr	4-3⅞x4⅜	58-3200	.....	162.0	.....	122-1600 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.281	.281	.341	.337
9	H-227	Ind	4-3½x5½	54-2000	.....	227.0	5.65	174-1000 (BE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.439
10	H-243	Ind	4-3⅝x5½	58.2-2000	.....	243.0	5.65	186-1000 (BE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.437
11	H-260	Ind	4-3⅞x5½	62-2000	.....	260.0	.....	200-1000 (BE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.437
12	F-186	Ind	6-3x4⅜	60.5-2400	.....	186.0	.....	147-1200 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.296	.341	.337
13	F-6186	C,T,Tr	6-3x4⅜	77-3500	.....	186.0	6.70	142-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.337
14	F-209	Ind	6-3⅛x4⅜	68-2400	.....	209.0	.....	165-1200 (BE)	N	In	L	Op	1.51	1.20	1.37	1.18	.296	.296	.341	.337
15	F-6209	C,T,Tr	6-3⅛x4⅜	90-3500	.....	209.0	6.70	160-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.339
16	F-228	Ind	6-3⅜x4⅜	73-2400	.....	226.0	.....	178-1200 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.296	.341	.338
17	F-6228	C,T,Tr	6-3⅜x4⅜	99-3500	.....	226.0	6.70	180-1600 (BE)	N	In	L	Op	1.51	1.32	1.37	1.18	.296	.281	.341	.338
18	M-271	Ind	6-3½x4⅝	86.2-2400	.....	271.0	.....	208-1100 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.403	.401
19	M-8271	T,B,Tr	6-3½x4⅝	97-3000	.....	271.0	6.70	209-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.402
20	M-290	Ind	6-3¾x4⅝	92.2-2400	.....	290.0	.....	221-1000 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.401
21	M-8290	T,B,Tr	6-3¾x4⅝	108-3000	.....	290.0	6.70	226-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.402
22	M-330	Ind	6-4x4⅝	104.4-2400	.....	330.0	.....	251-1100 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.402
23	M-8330	T,B,Tr	6-4x4⅝	125-3000	.....	330.0	6.70	258-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.359	.404	.402
24	B-371	Ind	6-4⅛x4⅝	110-2400	.....	371.0	6.60	280-1000 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
25	B-8371	T,B	6-4⅛x4⅝	123.5-3000	.....	371.0	6.56	284-1400 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
26	T-8371	T	6-4⅛x4⅝	144-3000	.....	371.0	6.40	297-1400 (BE)	N	In	I	Op	2.08	1.84	1.87	1.50	.469	.469	.437	.432
27	T-371	Ind	6-4⅛x4⅝	119-2400	.....	371.0	6.36	286-1200 (BE)	N	In	I	Op	2.08	1.84	1.87	1.50	.469	.469	.437	.432
28	T-427	Ind	6-4⅛x4⅝	140-2400	.....	427.0	6.36	335-1000 (BE)	N	In	I	Op	2.08	1.84	1.87	1.50	.469	.469	.437	.432
29	B-427	Ind	6-4⅛x4⅞	127-2400	.....	427.0	6.00	322-1000 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.438	.437
30	B-8427	T,B,M	6-4⅛x4⅞	142-3000	.....	427.0	6.50	328-1200 (BE)	N	In	L	Op	1.89	1.64	1.75	1.50	.359	.359	.435	.432
31	T-8427	T	6-4⅛x4⅞	180-3200	.....	427.0	6.40	350-1400 (BE)	N	In	I	Op	2.08	1.84	1.87	1.50	.469	.469	.437	.432
32	U-501	Ind	6-4½x5¼	160-2400	.....	501.0	.....	385-1200 (BE)	N	In	I	Op	2.14	1.87	2.00	1.63	.374	.374	.438	.432
33	U-8501	T,B,Ind	6-4½x5¼	178-2600	.....	501.0	6.20	414-1200 (BE)	N	In	I	Op	2.14	1.87	2.00	1.63	.374	.374	.438	.432
34	R-513	Ind	6-4½x5⅝	184.3-2400	.....	513.0	5.95	392-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.493
35	R-8513	T,B	6-4½x5⅝	192-2800	.....	513.0	6.00	422-1400 (BE)	N	In	I	Op	2.14	1.89	1.81	1.75	.500	.500	.500	.496
36	R-572	Ind	6-4⅝x5⅝	182.4-2400	.....	572.0	5.97	437-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
37	R-8572	T,B,	6-4⅝x5⅝	220-2800	.....	572.0	6.00	484-1200 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
38	R-602	Ind	6-4⅞x5⅝	192-2400	.....	602.0	6.00	460-1400 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
39	R-8602	T,B	6-4⅞x5⅝	232-2800	.....	602.0	6.00	484-1200 (BE)	N	In	I	Op	2.14	1.89	2.00	1.75	.500	.500	.500	.496
40	S-749	Ind	6-5⅛x5½	217-2200	.....	749.0	.....	570-1200 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.496
41	S-8749	T	6-5⅛x5½	280-2800	.....	749.0	.....	574-1400 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.494
42	K-8271	T	6-3½x4⅜	115-3200	.....	271.0	6.40	216-1400 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.408	.435	.432
43	K-8290	T	6-3¾x4⅜	123-3200	.....	290.0	6.40	232-1400 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.408	.435	.432
44	K-8330	T	6-4x4⅜	145-3200	.....	330.0	6.40	266-1800 (BE)	N	In	I	Op	1.99	1.64	1.78	1.56	.443	.408	.435	.432
45	S-8820	T	6-5⅛x5½	275-2800	.....	820.0	.....	628-1400 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.496
46	V-603	Ind	8-4⅛x4½	220-2800	.....	603.0	7.00	500-1400 (BE)	N	In	I	Aus	2.41	2.02	2.25	1.88	.512	.505	.500	.500
47	V-8603	T,B	8-4⅛x4½	242-3200	.....	603.0	7.00	500-1400 (BE)	N	In	I	Aus	2.41	2.02	2.25	1.88	.512	.505	.500	.500
48	S-820	Ind	8-5⅛x5½	237-2200	.....	820.0	.....	625-1000 (BE)	N	In	I	Op	2.39	2.14	2.25	2.00	.562	.562	.497	.495
49	H-277	Ind	4-4x5½	66.4-1800	.....	277.0	6.25	242-1000 (BE)	W	In	I	Op	1.64	1.45	1.50	1.31	.343	.343	.437	.437
50	M-363	Ind	6-4x4⅛	129-2800	.....	363.0	6.70	294-1400 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.402
51	M-8363	T,B	6-4x4⅛	146-3000	.....	363.0	6.70	304-1600 (BE)	N	In	L	Op	1.76	1.51	1.62	1.37	.343	.343	.404	.402
52	K-363	Ind	6-4x4⅛	123-2400	.....	363.0	6.50	295-1400 (BE)	N	In	I	Op	1.99	1.65	1.78	1.56	.466	.441	.435	.432
53	K-8363	T,B	6-4x4⅛	162-3200	.....	363.0	6.50	300-1800 (BE)	N	In	I	Op	1.99	1.65	1.78	1.56	.466	.441	.435	.432
54	Dearborn..... 125	M	6-3½x3⅛	.....	125-4000	239.0	7.50	215-2200 (BE)	N	In	I	.....	1.78	1.51	.....	.....	.360	.360	.342	.341
55	145	M	6-3⅝x3⅛	.....	142-4000	256.0	8.00	228-2500 (BE)	N	In	I	.....	1.78	1.51	.....	.....	.360	.360	.342	.341
56	165	M	6-3⅝x3⅛	.....	165-4000	272.0	8.00	258-2400 (BE)	N	In	I	.....	1.78	1.51	.....	.....	.360	.360	.342	.341
57	185	M	6-3⅝x3⅛	.....	185-4000	292.0	8.50	272-2500 (BE)	N	In	I	.....	1.78	1.51	.....	.....	.360	.360	.342	.341
58	215	M	6-3⅞x3⅛	.....	215-4000	312.0	9.00	290-2800 (EA)	N	In	I	Aus	1.78	1.51	1.56	1.30	.396	.396	.342	.341
59	Dodge... T-334, TL-334, T-336	T	6-3½x4⅛	112-3600	102-3600	230.2	7.60	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
60	T-361, T-362	T	6-3½x4⅛	112-3600	102-3600	230.2	7.60	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
61	T-338, TS-342	T	6-3½x4⅛	112-3600	102-3600	230.2	7.60	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
62	T-137	T	6-3½x4⅛	109-3600	94-3600	230.2	7.60	195-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
63	T-164, T-165	T	6-3½x4⅛	105-3600	92-3600	230.2	7.60	193-1200 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
64	T-342	T	6-3½x4⅛	112-3600	102-3600	230.2	7.60	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
65	T-384	T	6-3½x4⅛	112-3600	102-3600	230.2	7.60	198-1600 (BE)	N	In	L	Sil	1.53	1.41	1.27	1.29	.365	.365	.341	.341
66	TX-342, T-344	T	6-3½x4½	120-3600	110-3600	250.6	7.00	210-1200 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.365	.365	.341	.341
67	T-356	T	6-3½x4½	112-3600	101-3200	250.6	7.00	205-1600 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.365	.365	.341	.341
68	TX-344, T-346	T	6-3½x4⅜	125-3600	112-3400	265.4	7.00	225-1200 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
69	TX-356	T	6-3½x4⅜	114-3600	104-3200	265.4	7.00	216-1200 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
70	T-358, TX-358	T	6-3½x4⅜	114-3600	104-3200	265.4	7.00	216-1200 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
71	TX-346	T	6-3½x4⅜	136-3600	127-3600	265.4	7.00	228-1600 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
72	TS-344	T	6-3½x4½	120-3600	110-3600	250.6	7.00	210-1200 (BE)	N	In	L	Sil	1.72	1.50	1.53	1.38	.365	.365	.341	.341
73	TS-346	T	6-3½x4⅜	125-3600	112-3400	265.4	7.00	225-1200 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
74	TXS-346	T	6-3½x4⅜	136-3600	127-3600	265.4	7.00	228-1600 (BE)	N	In	L	Sil*	1.72	1.50	1.53	1.38	.365	.365	.341	.433
75	T-352, T-353	T	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
76	VT334, VT336, VT338, VT342	T	8-3½x3¼	172-4400	142-4000	269.6	8.00	256-2200 (BE)	N	In	I	CNS	1.72	1.47	.....	.....	.360	.360	.372	.371
77	VTX-342, VT-344, VTX-344	T	8-3⅝x3¼	172-4400	142-4000	269.6	7.60	256-2200 (BE)	N	In	I	CNS	1.72	1.47	.....	.....	.360	.360	.372	.371
78	VT-346, VTX-346	T	8-3⅝x3¼	175-4400	142-4400	269.6	7.60	256-2400 (BE)	N	In	I	Sil*	1.75	1.41	.....	.....	.360	.360	.372	.433
79	VT-348, VT-350	T	8-3⅞x3⅝	193-4000	174-4000	331.1	7.20	303-2600 (BE)	N	In	I	Sil*	1.94	1.75	.....	.....	.382	.331	.372	.433
80	VTX-350	T	8-3⅞x3⅝	202-4000	187-4000	331.1	7.20	316-2400 (BE)	N	In	I	Sil*	1.94	1.75	.....	.....	.382	.331	.372	.433
81	VTS-342	T	8-3½x3¼	172-4400	142-4000	269.6	8.00	256-2200 (BE)	N	In	I	CNS	1.72	1.47	.....	.....	.360	.360	.372	.371
82	VTS-344	T	8-3⅝x3¼	172-4400	142-4000	269.6	7.60	256-2200 (BE)	N	In	I	CNS	1.72	1.47	.....	.....	.360	.360	.372	.371
83	VTS-346	T	8-3⅝x3¼	175-4400	142-4400	269.6	7.60	256-2400 (BE)	N	In	I	Sil*	1.75	1.41	.....	.....	.360	.360	.372	.433
84	VTS-348	T	8-3⅞x3⅝	193-4000	187-4000	331.1	7.20	303-2600 (BE)	N	In	I	Sil*	1.94	1.75	.....	.....	.382	.331	.372	.433

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS												
Angle (Deg.)	Inserts Used	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engine Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
(h)	Op	SA	HG	CI	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	15¼	26⅛	26⅞	4	1
(h)	Op	SA	HG	CI	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	395	26	26⅛	29⅞	4,3	2
	E	SA	HG	AI	.....			1035	7	.....	DFS	N													3
(h)	Op	SA	HG	CI	.....	.859x2.68	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	26	26⅛	29⅞	4	4
(h)	Op	SA	HG	CI	.....	.859x2.68	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	395	26	26⅛	29⅞	4	5
(h)	Op	SA	HG	AI	.....	1.12x2.75	4	1035	7	.....	DFS	N	2.06x	3	2.37x1.53	2.37x1.68	.....	Op	Op	475	16⅛	19⅛	26⅛	4,3	6
(h)	Op	SA	HG	AI	.....	.859x2.87	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	370	26	26⅛	29⅞	8	7
(h)	Op	SA	HG	AI	.....	.859x2.87	4	1030	7	.....	DFS	N	1.93x1.31	3	2.25x1.18	2.25x1.89	acdgt	Op	Op	395	26	26⅛	29⅞	4,3	8
(h)	Op	SA	HG	Ala	.....	1.25x3.31	4	1035	9½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	Op	Op	645	19¼	33⅛	30½	.....	9
(h)	Op	SA	HG	AI	.....	1.25x3.18	4	1035	9½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	Op	Op	654	19¼	33⅛	30½	.....	10
(h)	E	SA	HG	AI	.....	1.25x3.18	4	1035	9½	.....	DFS	N	2.50x1.18	3	2.87x1.81	2.87x2.06	acdg	.....	.....	654	19⅛	33⅛	30½	.....	11
(h)	Op	SA	HG	AI	.....	.859x2.50	4	1030	7	.....	DFS	N	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	505	26	27¼	36⅛	4	12
(h)	Op	SA	HG	AI	.....	.859x2.50	4	1030	7	.....	DFS	Y	1.93x1.31	4	2.25x1.81	2.25x1.81	acdgt	Op	Op	515	26	27¼	36⅛	4,3	13
(h)	Op	SA	HG	AI	.....	.859x2.68	4	1030	7	.....	DFS	N	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	505	26	27¼	36⅛	4	14
(h)	Op	SA	HG	AI	.....	.859x2.68	4	1030	7	.....	DFS	Y	1.93x1.31	4	2.25x1.18	2.25x1.81	acdgt	Op	Op	515	26	27¼	36⅛	4,3	15
(h)	Op	SA	HG	AI	.....	.859x2.81	4	1030	7	.....	DFS	Y	2.06x1.31	4	2.37x1.26	2.37x1.73	acdgt	Op	Op	510	26	27¼	36⅛	4	16
(h)	Op	SA	HG	CI	.....	.859x2.81	4	1030	7	.....	DFS	Y	2.06x1.31	4	2.37x1.28	2.37x1.81	acdgt	Op	Op	515	26	27¼	36⅛	4,3	17
(h)	E	.....	HG	AI	.....	1.10x3.06	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25½	29½	42	3	18
(h)	E	SA	HG	AI	.....	1.10x3.06	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	19
(h)	E	SA	HG	AI	.....	1.10x3.18	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25¼	29½	42	3	20
(h)	E	SA	HG	AI	.....	1.10x3.18	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	21
(h)	E	SA	HG	AI	.....	1.10x3.43	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	720	25¼	29½	42	3	22
(h)	E	SA	HG	AI	.....	1.10x3.43	5	1035	8⅝	.....	DFS	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdgt	Op	Op	755	25¼	29½	42	4,3	23
(h)	E	St	HG	AI	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.62	acdgt	Op	Op	870	26	29¼	32⅛	2	24
(h)	E	St	HG	AI	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdgt	Op	Op	870	26	29¼	43⅛	3,2	25
(n)	E	St	HG	AI	.....	1.25x3.37	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1070	24½	31⅝	45⅛	.....	26
(n)	E	SA	.....	AI	.....	1.25x3.37	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1070	24½	31⅝	45⅛	.....	27
(n)	E	SA	.....	AI	.....	1.25x3.62	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1075	24½	31⅝	45⅛	.....	28
(h)	E	.....	HG	AI	.....	1.25x3.43	5	1035	8⅝	.....	DFS	Y	2.50x1.69	7	2.87x1.65	2.87x2.62	acdfgt	Op	Op	875	26	29¼	43⅛	2	29
(h)	E	St	HG	AI	.....	1.25x3.43	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdfgt	Op	Op	875	26	29¼	43⅛	3,2	30
(n)	E	St	HG	AI	.....	1.25x3.62	5	1035	8⅝	.....	DFS‡	Y	2.50x1.69	7	2.87x1.65	2.87x2.71	acdg	Op	Op	1075	24½	31⅝	45⅛	.....	31
(h)	E	SA	.....	AI	.....	1.50x3.72	5	1035	10½	.....	.....	.....	.....	7	2.75x1.75	2.75x2.81	acfg	.....	.....	.....	26½	37⅛	47⅞	2	32
(h)	E	St	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	.....	7	2.75x1.75	2.75x2.81	acfg	Op	Op	.....	26½	37⅛	47⅞	2	33
(h)	E	.....	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1550	.....	.....	.....	1	34
(h)	E	St	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acefg	Op	Op	1525	.....	.....	.....	2	35
(h)	E	.....	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1550	.....	.....	.....	1	36
(h)	E	St	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfg	Op	Op	1525	.....	.....	.....	2	37
(h)	E	St	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfg	Op	Op	1550	.....	.....	.....	1	38
(h)	E	St	HG	AI	.....	1.50x3.72	5	1035	10½	.....	DFS‡	Y	3.00x1.94	7	3.25x1.75	3.25x2.75	acdfgt	Op	Op	1525	.....	.....	.....	2	39
(h)	E	St	.....	AI	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.75x1.12	3.75x3.12	acdg	Op	Op	.....	31⅛	47⅛	57⅛	0	40
(h)	E	St	.....	AI	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.75x1.87	3.75x3.12	acdg	Op	Op	1865	31⅛	47⅛	57⅛	1	41
(n)	E	St	HG	AI	.....	1.10x3.06	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	42
(n)	E	St	HG	AI	.....	1.10x3.18	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	43
(n)	E	St	HG	AI	.....	1.10x3.43	5	1035	8⅝	.....	DFS‡	Y	2.25x1.56	7	2.62x1.50	2.62x2.18	acdfg	Op	Op	.....	.....	.....	.....	3	44
(h)	E	St	HG	AI	.....	1.75x4.53	5	8640	10½	.....	DFS‡	Y	.....	7	3.75x1.87	3.75x3.12	acdg	Op	Op	.....	.....	.....	.....	.....	45
(h)	E	AS	HG	AI	.....	1.50x3.97	4	8637	8⅝	46.8	1046	.....	3.13x3.13	5	3.50x1.63	3.50x2.75	abcdfg	.....	1¾	.....	.....	.....	.....	2	46
(h)	E	AS	HG	AI	.....	1.50x3.97	4	8637	8⅝	46.8	1046	.....	3.13x3.13	5	3.50x1.63	3.50x2.75	abcdfg	.....	1¾	1788	32⅛	33⅛	44⅞	2	47
(h)	E	St	HG	AI	.....	1.75x4.53	5	8640	10½	.....	DFS‡	.....	.....	7	3.75x1.87	3.75x3.12	abcdfg	Op	.....	.....	.....	.....	.....	.....	48
(h)	E	SA	HG	AI	.....	1.25x3.18	4	1035	9½	.....	DFS	.....	2.50x1.18	3	2.87x1.81	2.87x2.06	acdfg	Op	.....	660	19¼	33⅛	30½	3	49
(h)	E	SA	HG	AI	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x1.50	2.62x2.18	acdg	Op	.....	850	25¼	29½	42	3	50
(h)	E	SA	HG	AI	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x1.50	2.62x2.18	acdg	Op	.....	840	25¼	29½	42	3	51
(h)	E	Ste*	HG	AI	.....	1.11x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.81x1.36	2.81x1.94	acdfg	Op	.....	970	24½	34	40⅛	3	52
(h)	E	Ste*	HG	AI	.....	1.11x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.81x1.36	2.81x1.94	acf	Op	.....	960	24½	34	40⅛	3	53
45	N	.....	Ch	Ala	25.4	.912x3.02	3	SF	6⅛	24.2	AI	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1-⅛	638*	27-⅛	24⅞	36⅛	.....	54
45	N	.....	Ch	Ala	28.7	.912x3.02	3	SF	6⅛	24.2	AI	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1-⅛	638*	27-⅛	24⅞	36⅛	.....	55
45	N	.....	Ch	Ala	26.7	.912x3.02	3	SF	6⅛	24.2	AI	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1-⅛	640	27-⅛	24⅞	36⅛	.....	56
45	N	.....	Ch	Ala	26.8	.912x3.02	3	SF	6⅛	24.2	AI	Y	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Car	1-⅛	640	27-⅛	24⅞	36⅛	.....	57
45	N	.....	Ch	Alt	27.6	.912x3.02	3	SF	6¼	22.6	AI	.....	2.19x1.76	5	2.62x.728	2.62x.728	acdfg	Car	1-⅛	640*	27-⅛	24⅞	36⅛	.....	58
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1-⅛	490	24⅝	36¼	29⅛	.....	59
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	Car	1-⅛	510	24⅝	36¼	29⅛	.....	60
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1-⅛	510	24⅝	36¼	29⅛	.....	61
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1-⅛	510	24⅝	36¼	29⅛	.....	62
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1-⅛	510	23	37⅝	31⅞	.....	63
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	BB	1-⅛	510	.....	.....	.....	.....	64
45	E	SA	Ch	AI	16.0°°	.859x2.75	4	MS	7⅛	.....	CS	.....	2.06x1.00	4	2.50x1.17	2.50x1.59	acdg	Car	1-⅛	510	.....	.....	.....	.....	65
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7⅛	.....	CS	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	37⅛	32½	.....	66
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7⅛	.....	CS	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	31¼	32½	.....	67
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7¾	.....	CS(q)	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	37⅛	32½	.....	68
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7¾	.....	CS(q)	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	37⅛	32½	.....	69
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7¾	.....	CS(q)	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	31¼	32½	.....	70
45	E	SA	Ch	AI	18.5°°	.859x2.87	3	MS	7¾	.....	CS(q)	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB(2)	1-⅛	525	25⅛	37⅛	32½	.....	71
45	E	SA	Ch	AI	18.5°°	.859x2.75	3	MS	7⅞	.....	CS	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	37⅛	32½	.....	72
45	E	SA	Ch	AI	18.5°°	.859x2.75	3	MS	7¾	.....	CS	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB	1-⅛	525	25⅛	37⅛	32½	.....	73
45	E	SA	Ch	AI	18.5°°	.859x2.75	3	MS	7¾	.....	CS	.....	2.12x1.08	4	2.50x1.55	2.50x1.59	acdg	BB(2)	1-⅛	525	25⅛	37⅛	32½	.....	74
													2.50x1.34	7	3.00x1.71	3.00x2.93	acdfg	BB	1-⅛	1150	28⅛	38¼	42⅞	.....	75
45	N	.....	Ch	AI	16.2°°	.859x2.89	3	MS	5⅛	.....	CS	.....	1.93x.811	5	2.37x.820	2.37x1.53	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	76
45	N	.....	Ch	AI	17.0°°	.859x2.89	3	MS	5⅛	.....	CS	.....	1.93x.811	5	2.37x.820	2.37x1.53	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	77
45	E	CMT°	Ch	AI	16.2°°	.859x2.89	3	MS	5⅛	.....	CS(q)	.....	1.93x.811	5	2.37x.820	2.37x1.53	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	78
45	E	SII°	.....	AI	20.8°°	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x.875	2.50x1.59	acdfg	BB	1-⅛	.....	.....	.....	.....	.....	79
45	E	SII°	.....	AI	20.8°°	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x.875	2.50x1.59	acdfg	BB	1-⅛	.....	.....	.....	.....	.....	80
45	N	.....	Ch	AI	16.2°°	.859x2.89	3	MS	5⅛	.....	CS	.....	1.93x.811	5	2.50x1.17	2.50x1.59	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	81
45	N	.....	Ch	AI	17.0°°	.859x2.89	3	MS	5⅛	.....	CS	.....	1.93x.811	5	2.50x1.55	2.50x1.59	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	82
45	E	CMT°	Ch	AI	16.2°°	.859x2.89	3	MS	5⅛	.....	CS(q)	.....	1.93x.811	5	2.50x1.55	2.50x1.59	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	83
45	E	SII°	.....	AI	20.8°°	.984x3.14	3	MS	6⅝	.....	CS(q)	.....	2.25x.906	5	2.50x1.55	2.50x1.59	acdfg	Str	1-⅛	.....	.....	.....	.....	.....	84

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286.

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Fageol FTC-180	T,B,Ind	6-4½x4¾	180-2800		404.0	7.50	360-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
2	FTC-200	T,B,Ind	6-4¾x5	200-2800		451.0	7.29	400-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
3	FTC-210	T,B,Ind	6-4½x5	210-2800		477.0	7.09	480-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
4	*FTC-180	T,B,Ind	6-4½x4¾	180-2800		404.0	9.60	360-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
5	*FTC-200	T,B,Ind	6-4¾x5	200-2800		451.0	9.50	400-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
6	*FTC-210	T,B,Ind	6-4½x5	210-2800		477.0	9.00	480-1600 (BE)	D	In	I	2112n°	1.81	1.69	1.63	1.50	.388	.388	.373	.373
7	44	M	4-2½x2¼		29-5000	44.0	9.00	33-3600 (EA)	N	Se	I	CNS	1.10	1.05	1.19	1.19	.244	.244	.314	.313
9	Ford EAE	Tr	4-3⅞x3⅝	41-2000	39-2000	134.0	6.60	110-1450 (BE)	D	In	I	Aus	1.65	1.51	1.46	1.26	.355	.337	.342	.341
9	EAF	Tr	4-3⅞x3⅝	54.8-2200	48-2200	172.0	6.75	149-1300 (BE)	D	In	I	Aus	1.65	1.51	1.46	1.26	.355	.337	.342	.341
10	EBR	T	6-3⅝x3⅝	133-4000	120-3900	223.0	7.80	202-1850 (BE)	N	In	I	CNS	1.79	1.52			.366	.366	.342	.341
11	EBS, EBT	T	6-3⅝x3⅝	133-4000	120-3900	223.0	7.80	202-1850 (BE)	N	In	I	CNS	1.79	1.52			.366	.366	.342	.341
12	ECR	T	8-3⅝x3⅝	158-3800	141-3600	272.0	7.60	247-2400 (BE)	N	In	I	CNS	1.79	1.52			.360	.360	.342	.435
13	ECW, ECY	T	8-3⅝x3⅝	167-4400	143-4000	272.0	7.80	260-2350 (BE)	N	In	I	Aus	1.79	1.52			.384	.384	.342	.341
14	ECR Optional	T	8-3⅝x3⅝	168-3800	149-3600	272.0	7.60	259-2500 (BE)	N	In	I	CNS	1.79	1.52			.360	.360	.342	.435
15	ECS	T	8-3⅝x3½	175-3800	157-3600	302.0	7.50	279-2300 (BE)	N	In	I	CNS	2.01	1.52			.348	.374	.342	.435
16	ECS Optional	T	8-3⅝x3½	186-3800	166-3600	302.0	7.50	286-2400 (BE)	N	In	I	CNS	2.01	1.52			.348	.374	.342	.435
17	ECT	T	8-3⅝x3½	190-3800	172-3600	332.0	7.50	306-2300 (BE)	N	In	I	CNS	2.01	1.52			.348	.374	.342	.435
18	ECT Optional	T	8-3⅝x3½	200-3800	181-3600	332.0	7.50	316-2400 (BE)	N	In	I	CNS	2.01	1.52			.348	.374	.342	.435
19	D	Ind	4-3.9x3.6	61-2800		172.0	6.75	147-1400 (BE)	D	In	I	CNS	1.65	1.52	1.46	1.26	.355	.337	.343	.342
20	E	Ind	4-3.44x3.6	48.5-2800		134.0	6.60	110-1400 (BE)	D	In	I	CNS	1.65	1.52	1.46	1.26	.355	.337	.343	.342
21	F	Ind	6-3.62x3.6	107-2800		223.0	7.20	193-1800 (BE)	N	In	I	Nic	1.79	1.52	1.46	1.26	.334	.343	.342	.341
22	J	Ind	8-3⅝x3⅜	132-2800		272.0	7.60	250-2400 (BE)	N	In	I	CNS	1.79	1.52			.360	.360	.342	.435
23	L	Ind	8-3⅝x3½	160-2800		332.0	7.50	306-2300 (BE)	N	In	I	CNS	2.01	1.52			.348	.374	.342	.435
24	GMC 270	B	6-3⅞x4	125-3400	105-3200	269.5	7.50	232-1000 (BE)	N	In	I	SII	1.64	1.43	1.31	1.15	.395	.380	.341	.340
25	248	T	6-3⅞x3½	130-3600	120-3400	248.5	7.50	214-2200 (BE)	N	In	I	SII	1.64	1.43	1.31	1.15	.395	.380	.341	.340
26	270	T	6-3⅞x4	140-3600	127-3400	269.5	7.50	238-1800 (BE)	N	In	I	SII	1.64	1.43	1.31	1.15	.395	.380	.341	.340
27	302	T	6-4x4	155-3600	138-3400	301.6	7.50	268-1900 (BE)	N	In	I	Aus	1.86	1.56	1.56	1.18	.395	.386	.341	.340
28	316	T	8-3½x3¼	180-4400	156-3600	316.7	7.80	276-2400 (BE)	N	In	I	SII	1.70	1.56			.410	.410	.344	.344
29	324	T	8-3⅞x3⅛	175-3800	158-3600	324.0	7.50	305-2000 (BE)	N	In	I	SII	1.75	1.56			.366	.366	.344	.391
30	503	T	6-4⅛x5⅛	225-3200	199-2800	502.7	6.85	436-1500 (BE)	N	Se	I	SII(x)	2.09	1.69	1.75	1.50	.513	.513	.372	.434
31	Gray Marine Light 4-69	M	4-2½x3½		16-1800	69.0	6.07	476-1400 (EA)	N	In	L	SII	1.20	1.02	1.06	.875	.284	.284	.314	.313
32	Seascout 4-91	M	4-2⅞x3½		25-2000	91.0	7.45		N	In	L	SII	1.20	1.02	1.06	.875	.284	.284	.314	.313
33	Four-112	M	4-3⅛x3½		31-2000	112.0	6.00		N	In	L	SII	1.20	1.02	1.06	.800	.284	.284	.313	.313
34	Four 162	M	4-3⅞x4⅝		42-1800	162.0	6.50		N	In	L	SII	1.51	1.33	1.37	1.18	.331	.331	.340	.361
35	Four-48	M	4-2⅞x3½		45-3800	91.0	7.45		N	In	L	SII	1.20	1.02	1.06	.875	.284	.284	.314	.314
36	Four-75	M	4-3⅞x4⅝		75-3600	162.0	8.00		N	In	L	SII	1.64	1.45	1.37	1.18	.331	.331	.340	.313
37	Six-112	M	6-3⅛x4⅝		115-3600	226.0	8.00		N	In	L	SII	1.51	1.33	1.37	1.18	.311	.311	.340	.339
38	Fireball 4-90	M	4-3⅞x4⅝		90-4000	162.0	8.00		N	In	L	SII	1.64	1.45	1.16	1.07	.331	.331	.340	.318
39	Model 620	M	4-3⅞x3⅝		60-3200	140.0	7.05	96-2400 (EA)	N	In	L	SII	1.51	1.33	1.37	1.18	.331	.331	.341	.339
40	Model 70	M	4-3⅞x4⅝		70-3400	162.0	8.00	125-2200 (EA)	N	In	L	SII	1.64	1.45	1.37	1.18	.331	.331	.340	.313
41	Model 100	M	6-3⅞x4⅝		100-3400	226.0	8.00		N	In	L	SII	1.51	1.33	1.37	1.18	.311	.311	.340	.339
42	Model 110	M	6-3⅞x4⅝		110-3600	226.0	8.00	1595-2800 (EA)	N	In	L	SII	1.51	1.33	1.37	1.18	.348	.332	.340	.339
43	Model 115	M	6-3⅞x4⅝		115-3400	244.0	7.70		N	In	L	SII	1.70	1.42	1.56	1.31	.311	.311	.339	.343
44	Model 120	M	6-3⅞x4⅝		120-3400	244.0	8.00	186-2600 (EA)	N	In	L	SII	1.70	1.42	1.56	1.31	.311	.311	.339	.343
45	Model 135	M	6-3⅞x4⅝		135-3400	244.0	8.00	216-2600 (EA)	N	In	L	SII	1.70	1.42	1.56	1.31	.311	.311	.339	.343
46	Model 150	M	6-4x4⅝		150-3400	330.0	7.75		N	In	L	SII(x)	1.89	1.58	1.62	1.37	.354	.354	.403	.401
47	Model 165	M	6-4x4¼		165-3400	363.0	8.00	286-1400 (EA)	N	In	L	SII	1.89	1.59	1.62	1.37	.354	.354	.404	.431
48	Model 175	M	6-4x4¼		175-3400	363.0	8.00	316-1400 (EA)	N	In	L	SII	1.89	1.59	1.62	1.37	.354	.354	.404	.431
49	Model 185	M	6-4⅛x4⅞		185-3400	427.0	7.20	352-1200 (EA)	N	In	L	SII	2.16	1.77	2.02	1.63	.359	.359	.434	.431
50	Model 200	M	6-4⅛x4⅞		200-3400	427.0	7.20	368-1200 (EA)	N	In	L	SII	2.16	1.77	2.02	1.63	.350	.359	.434	.431
51	Hall-Scott (H) 504	T,B	6-4⅝x5	180-2500	162-2500	504.0	6.00	445-1800 (BE)	W	In	I	2112	2.15	2.02	2.00	1.75	.495	.495	.435	.434
52	(m) (H) 190-2-3-5	B,T	6-5½x6	220-2200	200-2200	779.0	5.50	625-1300 (BE)	W	In	I	2112	2.63	2.38	2.38	2.02	.482	.482	.497	.528
53	(m) 400	Ind	6-5¾x7	296-2000	252-2000	1090.0	5.70	930-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.497	.528
54	Defender 2286-87	M	12-5¾x7		605-2100	2181.0	6.50		N	Se	I	2112	2.87	2.75	2.62	2.50	.482	.482	.497	.528
55	2268, 2268-1, 2269, 2269-1	M,Ind	12-5¾x7		630-2100	2181.0	6.50		N	Se	I	2112	2.87	2.75	2.62	2.50	.482	.482	.497	.528
56	1091-G-1, (m) 1091-B-1	T,Ind	6-5¾x7	332-2200	308-2200	1090.0	6.40	960-1200 (BE)	N	Se	I	2112	2.62	2.37	2.38	2.02	.547	.547	.497	.528
57	935-G-1, (m) 935-B-1	T,Ind	6-5¾x6	295-2400	270-2400	935.0	6.40	800-1400 (BE)	N	Se	I	2112	2.62	2.37	2.38	2.02	.547	.547	.497	.528
58	590-GV-3, 590-GV-4	B,T,Ind	6-5x5	232-2800	205-2800	590.0	6.60	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
59	*590-BV-1	B,T,Ind	6-5x5	246-2800	205-2800	590.0	9.00	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
60	590-GH-1	B,T,Ind	6-5x5	232-2800	205-2800	590.0	6.60	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
61	*590-BH-1	B,T,Ind	6-5x5	246-2800	205-2800	590.0	9.90	510-1800 (BE)	N	Se	I	2112	2.37	2.37	2.14	2.14	.500	.500	.496	.496
62	590-O	Ind	6-5x5	229-2400	219-2400	590.0	8.70	510-1600 (BE)	N	Se	I	2112	2.38	2.38	2.16	2.19	.500	.500	.497	.496
63	6156-G-1	T	6-5¾x6	312-2400	294-2400	935.0	6.40	830-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
64	6156-B-1	T	6-5¾x6	338-2400	320-2400	935.0	8.10	870-1300 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
65	6182-G-1	T,Ind	6-5¾x7	332-2200	317-2200	1091.0	6.50	960-1250 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
66	6182-B-1	T,Ind	6-5¾x7	356-2200	341-2200	1091.0	8.10	1065-1100 (BE)	N	Se	I	2112	2.63	2.38	2.38	2.02	.547	.547	.496	.527
67	2269-D	Ind	12-5¾x7		550-1800	2181.0	7.00	1840-1200 (EA)	N	Se	I	2112	2.88	2.75	2.63	2.38	.482	.482	.496	.527
68	Hercules BXB	M,Tr,Ind	2-2⅞x3	10-2300	8.5-2300	39.0	6.00	28-1200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
69	NXA	M,Tr,Ind	2-3x4	13-2000	11-2000	56.5	6.20	39-1100 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
70	ZXA	M,T,Tr,Ind	4-2⅛x3	22.5-4000	19-4000	59.0	6.30	36-2200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
71	ZXB	T,Tr,M,Ind	4-2⅝x3	25-4000	21-4000	65.0	6.30	40-2200 (BE)	N	In	L	Aus	1.30	1.05	1.12	.875	.200	.200	.248	.248
72	NXB	M,Tr,Ind	2-3⅛x4	15.6-2000	13-2000	66.3	6.20	46-1100 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
73	IXA	T,Tr,M,Ind	4-3x4	40-3200	34-3200	113.0	6.50	78-1800 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
74	IXB	T,Tr,M,Ind	4-3⅛x3	46-3200	39-3200	133.0	6.50	92-1800 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
75	IXLB	T,Tr,M,Ind	4-3⅛x4⅛	49-3200	42-3200	141.0	6.50	97-1800 (BE)	N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
76	JX4E	T,Tr,M,Ind	4-3⅛x4¼	52-2900	44-2900	164.0	6.70	121-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
77	GO-173	Tr,M,Ind	4-3⅛x4½	67-3200	61-3200	173.0	6.50	136-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.389	.389	.375	.375
78	JX4C	T,Tr,M,Ind	4-3⅜x4¼	60-2900	51-2900	186.0	6.70	139-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
79	QXA	T,B,Tr,M,Ind	6-3⅛x4⅛	64-3200	54.5-3200	190.0	6.50	132-1300 (BE)	N	In	L	2112N	1.40	1.40	1.31	1.12	.311	.311	.310	.310
80	GO-196	Tr,M,Ind	4-3⅜x4½	76-3200	68.5-3200	196.0	6.50	150-1400 (BE)	D		I	2112	1.69	1.50	1.44	1.25	.389	.389	.375	.375
81	QXB	T,B,Tr,M,Ind	6-3⅛x4⅛	69-3200	59-3200	205.0	6.50	142-1400 (BE)	N	In	L	2112N	1.40	1.40	1.31	1.12	.311	.311	.310	.310
82	JX4D	T,Tr,M,Ind	4-4x4¼	68-2900	57-2900	214.0	6.70	157-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
83	QXC	T,B,Tr,M,Ind	6-3⅜x4⅛	77.5-3200	66-3200	221.0	6.50	159-1400 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
84	GO-226	Tr,M,Ind	4-4x4½	87-3200	78.5-3200	226.0	6.50	182-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.389	.389	.375	.375

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS											
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	E	71360°	Ch	Alt	53.5	1.25x3.62	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	1
45	E	71360°	Ch	Alt	54.0	1.25x3.62	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	2
45	E	71360°	Ch	Alt	56.8	1.25x3.87	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Hol	1¼	952	33⅞	26⅞	48⅛	1,2,3	3
45	Bo	71360°	Ch	Alt	53.5	1.25x3.62	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.62x1.81	2.63x1.81	acdefg	Alg	1¼	952	33⅞	26⅞	48⅛	1,2,3	4
45	Bo	71360°	Ch	Alt	54.0	1.25x3.62	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Alg	1¼	952	33⅞	26⅞	48⅛	1,2,3	5
45	Bo	71360°	Ch	Alt	56.8	1.25x3.87	4	SF	8½	63.8	CS	Y	2.49x1.69	7	2.63x1.81	2.63x1.81	acdefg	Alg	1¼	952	33⅞	26⅞	48⅛	1,2,3	6
45	N	.....	HG	Ats	8.3	.625x2.13	4	3140	4½	10.8	NI		1.37x1.07	5	1.37x1.42	1.50x1.50	acd	Car	1⅛	120	14¼	20⅞	23⅝	5	7
45	E	CA	HG	Alst	24.0	.912x2.84	3	1041	6¼	32.0	NI		2.30x1.25	3	2.50x1.50	2.50x1.65	acdf	MaS	⅞	489*	19⅞	27⅛	30⅛	5	8
45	E	CA	HG	Alst	31.4	.912x3.17	3	1041	6¼	32.0	NI		2.30x1.25	3	2.50x1.50	2.50x1.65	acdf	MaS	1	489*	19⅛	27⅛	30⅛	5	9
45	N	.....	Ch	Alst	.....	.912x3.02	3	SF	6¼	29.6	Al	.....	2.30x1.25	4	2.50x.954	2.50x1.18	acdfg	Own	.....	.....	19⅛	30⅛	33⅛	.....	10
45	N	.....	Ch	Alst	.....	.912x3.02	3	SF	6¼	29.6	Al	.....	2.30x1.25	4	2.50x.954	2.50x1.18	acdfg	Own	.....	.....	19⅛	30⅛	34⅛	.....	11
45	E	TCA	Ch	Alst	.....	.912x3.02	3	SF	6¼	24.6	Al	.....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Own	.....	.....	32⅛	32⅛	31½	.....	12
45	E	TCA	Ch	Alst	.....	.912x3.02	3	SF	6¼	24.6	Al	.....	2.19x1.76	5	2.50x.728	2.50x.728	acdf	Own	.....	.....	32⅛	35¼	31½	.....	13
45	E	TCA	SG	Alst	.....	.912x3.02	4	SF	7⅛	28.3	SF	.....	2.25x1.88	5	2.63x.723	2.63x1.45	acdf	Own	.....	.....	33⅛	35⅛	31½	.....	14
45	E	TCA	SG	Alst	.....	.912x3.02	4	SF	7⅛	28.3	SF	.....	2.25x1.88	5	2.63x.723	2.63x1.45	acdf	Own	.....	.....	33⅛	.....	31½	.....	15
45	E	TCA	SG	Alst	.....	.912x3.17	4	SF	7⅛	28.3	SF	.....	2.25x1.88	5	2.63x.723	2.63x1.45	acdf	Own	.....	.....	33⅛	35⅛	31½	.....	16
45	E	TCA	SG	Alst	.....	.912x3.17	4	SF	7⅛	28.3	SF	.....	2.25x1.88	5	2.63x.723	2.63x1.45	acdf	Own	.....	.....	33⅛	.....	31½	.....	17
45	E	TCA	SG	Alst	.....	.912x3.17	4	SF	7⅛	28.3	SF	.....	2.25x1.88	5	2.63x.723	2.63x1.45	acdf	Own	.....	.....	33⅛	.....	31½	.....	18
45	N	N	Ch	Alst	25	.912x2.98	3	MS	6¼	24	Al	.....	2.19x1.76	5	2.50x1.17	2.50x1.22	acdfg	Hol‡	1	606	28¼	30⅛	31½	3,4	19
45	N	N	Ch	Alst	26	.912x3.03	3	MS	6¼	30.5	Al	.....	2.30x1.25	4	2.50x1.30	2.50x1.64	acdfg	Hol	1¼	507	23½	29⅛	36¼	3,4	20
45	E	MCS	Ch	Alst	26	.912x3.02	3	MS	6¼	24	Al	.....	2.19x1.76	5	2.50x1.17	2.50x1.22	acdfg	Hol‡	1¼	620	28¼	31⅛	31½	3,4	21
45	E	TCA	Ch	Alst	.....	.912x3.02	3	SF	6¼	24.6	Al	.....	2.50x3.57	5	2.50x.728	2.50x.728	acdfg	Hol	1¼	.....	28⅛	32⅛	32⅞	3,4	22
45	E	TCA	SG	Alst	.....	.912x3.17	4	SF	7⅛	28.3	SF	.....	2.62x<.20	5	2.63x.723	2.63x1.45	acdf	Hol	1¼	.....	31⅛	34⅛	33⅛	.....	23
30	AS	.....	HG	Al	41	.990x3.25	4	1141	7	35	1046	Y	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdfg	Zen	1½	.....	26⅛	35	41	.....	24
30	N	.....	HG	Al	39.0	.990x3.25	4	1141	7	35.0	1046	.....	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdefg	Zen	1½	.....	26⅛	35	41	.....	25
30	N	.....	HG	Al	41.0	.990x3.25	4	1141	7	35.0	1046	.....	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdefg	Zen	1½	.....	26⅛	35	41	.....	26
(h)	N	.....	HG	Al	43.0	.990x3.50	4	1141	7	35.0	1046	.....	2.31x1.44	4	2.69x1.25	2.78x1.53	abcdefg	Hol	1	.....	26	34	40⅛	.....	27
(h)	.....	.....	Ch	Alst	.....	.980x3.03	3	1335	6½	30.0	1045	.....	2.25x2.00	5	2.50x.940	2.50x1.56	abcdefg	Ben	1¼	.....	.....	.....	.....	.....	28
45	N	.....	Ch	Alst	.....	.980x3.03	3	1335	6½	30.0	1145	.....	2.25x2.00	5	2.50x.940	2.63x1.69	abcdefg	Hol	1¼	.....	.....	.....	.....	.....	29
(h)	E	AS	HG	Al	67.0	1.25x3.96	4	1340	10¾	67.0	5046	.....	2.62x1.75	7	3.00x2.19	3.00x2.19	abcdefg	Hol	1¾	.....	39⅝	41	49¾	.....	30
(h)	N	.....	HG	CI	.....	.708x2.06	3	1030	5¾	.....	1045	N	1.43x1.06	3	1.75x8.75	1.75x1.32	acd	Zen	1	370	17¾	19⅞	31	.....	31
(h)	N	.....	HG	Al	.....	.703x2.43	3	1030	5¾	.....	1045	N	1.5x1.18	3	1.75x1.78	1.75x1.37	acdr	Zen	1	385	17¾	19⅞	31	.....	32
(h)	N	.....	HG	Al	.....	.708x2.75	3	1030	5¾	.....	1045	.....	1.50x1.00	3	1.75x1.43	1.75x1.21	acdr	Zen	1	400	17¾	19⅞	31	.....	33
(h)	N	.....	HG	Al	.....	.859x2.69	4	CS	7	.....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1¼	565	19½	22⅞	30	.....	34
(h)	N	.....	HG	Al	.....	.703x2.43	3	CS	8¾	.....	1045	N	1.5x1.18	3	1.75x1.78	1.75x1.37	acdr	Zen	1¼	390	17¾	19⅞	31	.....	35
(h)	N	.....	HG	Al	.....	.859x2.68	4	CS	7	.....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1¼	540	23⅛	22⅞	35	.....	36
(k)	N	.....	HG	Al	.....	.859x2.81	4	CS	7	.....	1045	Y	2.06x1.31	4	2.37x1.73	2.37x1.28	acdr	Zen	1¼	675	21⅛	23⅛	41	.....	37
(k)	N	.....	HG	Al	.....	.859x2.68	4	CS	7	.....	1045	N	1.93x1.31	3	2.25x1.89	2.25x1.18	acdr	Zen	1¼	540	21⅛	22⅞	35	.....	38
(k)	N	.....	HG	Al	28	.859x2.68	4	1035	7	28	1045	.....	1.94x1.31	3	2.25x1.89	2.25x1.31	acd	Car	1¼	525	19⅛	21⅞	34	.....	39
(k)	N	.....	HG	Al	.....	.859x2.68	4	1035	7	28.0	1045	.....	1.93x1.31	3	2.25x1.89	2.25x1.18	acd	Zen	1¼	545	19⅛	21⅞	34	.....	40
(k)	N	.....	HG	Al	.....	.859x2.81	4	1030	7	.....	1045	.....	2.06x1.31	4	2.37x1.73	2.37x1.28	acdr	Zen	1¼	660	21⅛	23⅛	41	.....	41
(k)	N	.....	HG	Alt	32	.859x2.81	4	1035	7	.....	1045	.....	2.06x1.31	4	2.37x1.73	2.37x1.28	acd	Str	1¼	700	22	27	41	.....	42
45	N	.....	HG	Al	.....	.859x2.87	4	1035	8⅝	.....	1045	.....	2.12x1.37	4	2.37x2.06	2.37x1.43	acdr	Zen	1½	785	25⅛	23⅛	44	.....	43
45	N	.....	HG	Al	.....	.859x2.87	4	1035	8⅝	.....	1045	.....	2.12x1.37	4	2.37x2.06	2.37x1.43	acd	Zen	1½	785	25¼	23⅝	43½	.....	44
45	N	.....	HG	Al	.....	.858x2.87	4	1035	8⅝	.....	1045	.....	2.12x1.37	4	2.37x2.06	2.37x1.43	acd	Zen	1½	800	25¼	23⅝	43	.....	45
(k)	N	.....	HG	Al	.....	1.10x3.43	5	1035	8⅝	.....	1045	.....	2.25x1.56	7	2.62x2.15	2.62x1.56	acdr	Zen	2	1050	24⅝	25¼	49	.....	46
(k)	N	.....	HG	Alt	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x2.15	2.62x1.56	acd	Zen	.....	1050*	24⅝	25¼	48½	.....	47
(k)	N	.....	HG	Alt	.....	1.10x3.43	5	1035	8⅝	.....	1046	.....	2.25x1.56	7	2.62x2.15	2.62x1.56	a	Zen	.....	1070*	24⅝	25¼	46½	.....	48
(k)	N	.....	HG	Alt	.....	1.25x3.63	5	1035	8⅝	.....	1045	.....	2.50x1.65	7	2.87x2.71	2.87x1.65	a	Zen	.....	1245*	28⅛	27⅛	51⅛	.....	49
(k)	N	.....	HG	Alt	.....	1.25x3.63	5	1035	8⅝	.....	1045	.....	2.50x1.65	7	2.87x2.71	2.87x1.65	a	Zen	.....	1250*	28⅛	27⅛	51⅛	.....	50
(h)	E	4140°	Ch	Al	74.4	1.12x3.98	4	3135	11	79.1	4140	Y	2.62x2.00	8	3.00x1.46	3.00x2.28	acdef	Zen	2	1275*	58⅝	20⅞	70⅞	2	51
(h)	E	4140°	Ch	Al	101	1.37x4.44	6	3135	11	104	4140	Y	2.75x2.44	7	3.25x2.19	3.25x2.50	acdefg	Zen	2	1786*	5●⅛	22	71⅝	1,2	52
(h)	E	4140°	HC	Al	120	1.37x4.93	5	3140	12	132	4140	Y	3.00x2.43	7	3.25x2.09	3.25x3.12	acdefg	Zen	2½	2150*	28	44⅝	80⅞	1,2,0	53
(h)	E	4140°	HC	Al	128	1.37x4.94	5	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	acdefgr	Zen(3)	2½	4560*	43¾	50⅛	108⅞	.....	54
30	E	4140°	HC	Al	128	1.37x4.94	6	3140	12	237♦	4140	Y	3.00x2.43	7	3.25x2.09	3.25x2.09	acdefgr	Zen(3)	2½	3650*	45	47¼	88	.....	55
(h)	E	4140°	HC	Al	141	1.62x4.93	4	3140	11½	136	4140	Y	3.2●x2.06	7	3.50x2.10	3.50x3.05	abcdefg	Zen	2½	2150*	30⅛	44	61¼	2,1,½,0	56
(h)	E	4140°	HC	Al	145	1.62x4.93	4	3140	11½	136	4140	Y	3.24x2.06	7	3.50x2.10	3.50x3.65	abcdefg	Zen	2½	2150*	30⅛	44	61¼	2,1,½,0	57
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Hol	1½	1130*	26⅛	38¼	49¾	2	58
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Cen	2½	1130*	26⅛	38¼	49¾	2	59
45	E	41●0°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Hol	1½	1210	54	23	50½	2	60
45	E	4140°	Ch	Al	89	1.50x4.44	3	3135	9	93	4140	Y	3.00x2.09	7	3.24x1.67	3.25x2.38	acdefg	Cen	2½	1210	54	23	50½	2	61
45	E	4140	Ch	Al	89.0	1.50x4.44	3	3135	9	93.0	4140	.....	3.00x2.09	7	3.25x1.67	3.25x2.38	acdefg	Alg	2½	1130	26⅛	38¼	51⅛	1	62
(h)	E	4140	Ch	Al	145	1.62x4.93	4	3140	11½	148	4140	.....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdefg	Hol	1¼	2150	30⅛	48⅝	60½	1	63
(h)	E	4140	Ch	Al	145	1.62x4.93	4	3140	11½	148	4140	.....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdefg	Cen	2½	2150	30⅛	48⅝	60½	1	64
(h)	E	4140	Ch	Al	141	1.62x4.93	4	3140	11½	148	4140	.....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdefg	Hol	1¼	2150	30⅛	48⅝	60½	1	65
(h)	E	4140	Ch	Al	141	1.62x4.93	4	3140	11½	148	4140	.....	3.24x2.06	7	3.50x2.10	3.50x3.05	acdfg	Cen	2½	2150	30⅛	48⅝	60½	1	66
30	E	4140	Ch	Al	128	1.37x4.94	4	3140	12	237	4140	.....	3.00x2.43	7	3.25x2.09	3.25x2.09	acdefg	Ena	2½	5155	45⅝	68¾	75¼	0	67
30	Op	St	HG	CI	25	.687x2.50	3	3140	5½	15	1045	Y	1.50x1.00	2	2.00x1.25	2.00x1.37	acg	Op	⅝	131	16⅛	16⅛	18⅛	5,6	68
30	Op	Eat	HG	Al	28	.750x2.56	3	3140	6⅞	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	acg	Op	¾	270	17⅝	18⅝	20⅛	4,5	69
30	Op	Eat	HG	CI	19	.687x2.20	3	3140	5½	15	4140	N	1.50x1.00	3	2.00x1.31	2.00x1.37	acg	Op	Op	179	16⅛	16⅛	23⅛	5,6	70
30	Op	Eat	HG	AC	21	.687x2.33	3	3140	5½	15	4140	N	1.50x1.00	3	2.00x1.31	2.00x1.37	acg	Op	Op	179	16⅛	16⅛	23⅛	5,6	71
30	Op	Eat	HG	Al	29.5	.750x2.81	3	3140	6⅞	21	1045	Y	1.75x1.12	2	2.00x1.56	2.00x1.62	acg	Op	¾	270	17⅝	18⅝	20⅛	4,5	72
30	Op	Eat	HG	AC	28	.750x2.56	3	3140	6⅞	21	CS‡	Op	1.75x1.12	3	2.00x1.56	2.00x1.62	acg	Op	Op	285	17⅝	19⅝	26⅛	4,5	73
30	Op	Eat	HG	AC	29.5	.750x2.81	3	3140	6⅞	21	CS‡	Op	1.75x1.12	3	2.00x1.56	2.00x1.62	acg	Op	Op	293	17⅝	19⅝	26⅛	4,5	74
30	Op	Eat	HG	Al	29.5	.75x2.81	3	3140	6⅞	21	4140	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acdg	Op	Op	293	17⅝	19⅝	26⅛	4,5	75
45	Op	Eat	HG	Al	31	1.00x2.90	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1¼	470	20⅛	24⅛	31⅛	3,4,5	76
45	N	.....	HG	Alt	33.2	1.13x2.84	4	3140	8	43.5	1046	.....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	Op	.....	500	22⅛	33	31⅛	.....	77
45	Op	Eat	HG	Al	37.5	1.00x3.25	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1¼	470	20⅛	24⅛	31⅛	3,4,5	78
30	Op	Eat	HG	CI	26	.875x2.67	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1¼	440	17⅛	20⅛	35⅛	3,4,5	79
45	N	.....	HG	Alt	40.3	1.13x3.03	4	3140	8	43.5	1046	.....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	.....	.....	500	22⅛	33	31⅛	.....	80
30	Op	Eat	HG	Al	24	.875x2.81	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1¼	440	17⅛	20⅛	35⅛	3,4,5	81
45	Op	Eat	HG	Al	40.5	1.00x3.50	4	3140	8	37	1046‡	Y	2.00x1.50	5	2.50x1.31	2.50x2.12	acg	Op	1¼	470	20⅛	24⅛	31⅛	3,4,5	82
30	Op	Eat	HG	Al	28	.875x2.92	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1¼	440	17⅛	20⅛	35⅛	3,4,5	83
45	N ∮	.....	HG	Alt	43.4	1.13x3.34	4	3140	8	43.5	1046	.....	2.00x1.31	5	2.50x1.16	2.50x1.16	abcdefg	.....	.....	500	22⅛	33	31⅛	.....	84

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
	Hercules—Cont'd																			
1	QXD	T,B,Tr,M,Ind	6-3 7/16x4 1/2	78.4-3200	70-3200	230.0	6.50	167-1500 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
2	QXLD	T,B,Tr,M,Ind	6-3 7/16x4 1/2	92-3200	77-3200	236.7	6.50	190-1400 (BE)	N	In	L	2112N	1.64	1.64	1.50	1.25	.311	.311	.310	.310
3	JXE	T,B,Tr,M,Ind	6-3 1/2x4 1/2	91-3200	77-3200	245.0	6.50	184-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
4	GO-260	Tr,M,Ind	6-3 1/2x4 1/2	101-3200	91-3200	260.0	6.50	208-1400 (BE)	N	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.375
5	JXB	T,B,Tr,M,Ind	6-3 5/8x4 1/4	98-3200	83-3200	263.0	6.50	190-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
6	JXC	T,B,Tr,M,Ind	6-3 5/8x4 1/4	103-3200	87.5-3200	282.0	6.50	207-1400 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
7	GO-296	Tr,M,Ind	6-3 5/8x4 1/2	115-3200	104-3200	298.0	6.50	240-1400 (BE)	D	In	I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.375
8	JXD	T,B,Tr,M,Ind	6-4x4 1/2	113-3000	96-3000	320.0	6.50	240-1200 (BE)	N	In	L	2112N	1.68	1.56	1.50	1.37	.356	.356	.373	.373
9	JXLD	T,B,Tr,M,Ind	6-4x4 1/2	131-3200	111-3200	339.0	6.50	272-1400 (BE)	N	In	L	2112N	1.83	1.67	1.72	1.50	.356	.356	.373	.373
10	GO-339	Tr,M,Ind	6-4x4 1/2	131-3200	118-3200	339.0	6.50	272-1400 (BE)			I	2112	1.69	1.50	1.44	1.25	.369	.369	.375	.375
11	WXLC	T,B,Tr,M,Ind	6-4x4 3/4	123-2600	104-2600	358.0	6.50	275-1300 (BE)	N	In	L	3140	1.87	1.75	1.68	1.62	.388	.388	.373	.373
12	WXC-3	T,B,Tr,M,Ind	6-4 1/4x4 1/2	131-2600	111-2600	383.0	6.50	298-1400 (BE)	N	In	L	2112N	1.87	1.75	1.62	1.56	.388	.388	.373	.373
13	WXLC-3	T,B,Tr,M,Ind	6-4 1/4x4 3/4	139-2600	118-2600	404.0	6.50	312-1300 (BE)	N	In	L	2112	1.92	1.78	1.75	1.62	.388	.388	.373	.373
14	TDXB	T,B,Tr,M,Ind	6-4 5/8x5 1/4	161-2600	137-2600	474.0	6.50	366-1300 (BE)	N	In	L	2112	2.06	2.00	1.87	1.75	.388	.388	.435	.435
15	RXB	T,B,Tr,M,Ind	6-4 1/2x5 1/4	137-2400	116-2400	501.0	6.30	350-1200 (BE)	N	In	L	2112N	2.00	2.00	1.75	1.75	.388	.388	.373	.373
16	TDXC	T,B,Tr,M,Ind	6-4 1/2x5 1/4	170-2600	146-2600	501.0	6.50	388-1300 (BE)	N	In	L	2112	2.06	2.00	1.87	1.75	.388	.388	.435	.435
17	RXC	T,B,Tr,M,Ind	6-4 5/8x5 1/4	143-2400	121-2400	529.0	6.30	372-1100 (BE)	N	In	L	2112N	2.00	2.00	1.75	1.75	.388	.388	.373	.373
18	RXLC	T,B,Tr,M,Ind	6-4 5/8x5 1/4	146-2400	124-2400	529.0	6.30	408-1100 (BE)	N	In	L	2112N	2.00	2.00	1.81	1.75	.388	.388	.373	.373
19	RXLD	T,B,Tr,M,Ind	6-4 5/8x5 1/4	154-2400	131-2400	558.0	6.30	430-1100 (BE)	N	In	L	2112N	2.00	2.00	1.81	1.75	.388	.388	.373	.373
20	RXLDH	T,B,Tr,M,Ind	6-4 5/8x5 1/4	181-2600	153-2600	558.0	6.50	443-1400 (BE)	N	In	L	2112N	2.06	2.00	1.87	1.75	.442	.442	.435	.435
21	HXB	T,B,Tr,M,Ind	6-5x6	160-2000	135-2000	707.0	6.20	502- 900 (BE)	N	Se	L	2112	2.43	2.31	2.12	2.00	.468	.468	.498	.498
22	HXC	T,B,Tr,M,Ind	6-5 1/4x6	175-2000	149-2000	779.0	6.20	555- 900 (BE)	N	Se	L	2112	2.44	2.31	2.12	2.00	.468	.468	.498	.498
23	HXLC	T,B,Tr,M,Ind	6-5 1/4x6	240-2.00	212-2400	779.0	6.40	600-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.498	.498
24	HXD	T,B,Tr,M,Ind	6-5 1/2x6	202-2000	172-2000	855.0	6.20	645- 900 (BE)	N	Se	L	2112	2.44	2.31	2.12	2.00	.468	.468	.498	.498
25	HXLD	T,B,Tr,M,Ind	6-5 1/2x6	252-2400	225-2400	855.0	6.40	698-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.498	.498
26	HXE	T,B,Tr,M,Ind	6-5 3/4x6	227-2000	193-2000	935.0	6.20	750- 900 (BE)	N	Se	L	2112	2.44	2.31	2.18	2.00	.468	.468	.498	.498
27	HXLE	T,B,Tr,M,Ind	6-5 3/4x6	272-2400	245-2400	935.0	6.40	780-1400 (BE)	N	Se	L	2112	2.44	2.31	2.25	2.00	.500	.500	.499	.498
28	International U-1	Tr,Ind	4-2 5/8x2 3/4	17-2500	16.5-2500	59.5	7.00	36.5-1700 (EA)	N	In	L	CNS	1.10	.910	.980	.790	.222	.222	.310	.310
29	U-123	Tr,Ind	4-3 1/8x4	31.2-2000	30-2000	123.0	6.47	97.8-1180 (BE)	W	In	I	Sil	1.34	1.16	1.19	1.00	.261	.261	.341	.341
30	U-169	Tr,Ind	4-3 7/16x4 1/4	48.5-2000	46.5-2000	169.0	6.60	139-1120 (BE)	D	In	I	Sil	1.50	1.38	1.35	1.23	.388	.388	.341	.341
31	U-264	Tr,Ind	4-4x5 1/2	56.5-1800	55-1800	263.9	5.90	197- 900 (EA)	D	In	I	CNS	1.81	1.66	1.59	1.44	.438	.438	.372	.372
32	U-220	Ind	6-3 1/16x3 1/2	64-2400	62-2400	220.5	6.50	151-1200 (EA)	N	In	I	CNS	1.66	1.52	1.50	1.31	.397	.397	.372	.370
33	U-240	Ind	6-3 7/16x4	66.5-2400	64-2400	240.3	6.50	168-1200 (EA)	N	In	I	CNS	1.66	1.52	1.63	1.31	.398	.398	.372	.370
34	U-282	Ind	6-3 7/16x4 1/2	79.1-2400	75.5-2400	282.5	6.50	201-1225 (EA)	N	In	I	Sil°	1.81	1.61	1.50	1.44	.406	.406	.372	.372
35	U-372	Ind	6-4 5/8x4 1/2	96.5-2200	91.5-2200	372.1	6.50	263-1200 (EA)	D	In	I	Sil°	2.25	1.55	2.00	1.60	.449	.449	.434	.434
36	U-450	Ind	6-4 5/8x5	118-2200	110-2200	450.9	6.50	324-1200 (EA)	D	In	I	Sil°	2.25	1.55	2.00	1.60	.449	.449	.434	.434
37	U-1091	Ind	6-5 3/4x7	214-1600	200-1600	1090.6	7.50	823- 800 (EA)	D	In	I	CNS	2.53	2.09	2.31	1.98	.625	.625	.495	.494
38	U-406	Ind	6-4 5/8x4 1/2	104-2200	98-2000	405.9	6.50	279-1200 (EA)	D	In	I	Sil°	2.25	1.55	2.00	1.60	.449	.449	.434	.434
39	Kermath "Cub	M	4-2 5/8x3		25-3400	53.0	6.00	40-1700 (EA)	N	In	L	Sil	1.25	1.12	1.12	.875	.250	.250	.310	.310
40	"Jeep	M	4-3 1/16x4 5/8		40-2700	134.0	6.48	106-2200 (EA)	N	In	L		1.53	1.46	1.34	1.23	.359	.359	.373	.373
41	"Jeep	M	4-3 1/16x4 5/8		61-3600	134.0	6.48	106-2200 (EA)	N	In	L		1.53	1.46	1.34	1.28	.359	.359	.373	.373
42	"Prince	M	6-3 7/16x4 1/8		100-3600	221.0	6.50		N	In	L	Sil	1.87	1.87	1.81	1.81	.281	.281	.310	.310
43	"Rover	M	6-4x4 1/2		130-3000	320.0	6.90	235-2000 (EA)	N	In	L	CNS	1.84	1.62	1.62	1.37	.376	.376	.373	.373
44	"Mate	M	6-4 1/2x4 5/8		160-3000	404.0	6.50		N	In	L	CNS	2.06	1.87	1.81	1.62	.500	.500	.373	.373
45	"Farer	M,Ind	6-5x5 1/2		225-2400	678.0	5.70	480-1000 (EA)	N	Se	L	CNS	2.62	2.37	2.37	2.00	.437	.437	.437	.437
46	"Raider Special 6	M,Ind	6-5 1/4x6		280-2400	779.0	6.00	620-2200 (EA)	N	Se	I	Tun	1.93	1.93	1.76	1.76	.375	.375	.437	.437
47	"Raider Special 12	M,Ind	12-5 1/4x6		580-2400	1560.0	5.70	1070-1400 (EA)	N	Se	I	CNS	1.93	1.93	1.76	1.76	.375	.375	.437	.437
48	Sea Prince Special	M	6-3 7/16x4 1/4		105-3600	236.6	6.80	190-1900 (EA)	N	In	L	2112N	1.61	1.39	1.25	1.25	.340	.340	.310	.310
49	Sea Rover Special	M	6-4x4 1/2		145-3200	339.0	6.80	263-2000 (EA)	N	In	L	Aus	1.83	1.68	1.72	1.50	.356	.356	.373	.373
50	Lathrop Standard	M	3-5 1/2x6 1/2		34- 800	453.2		237- 700 (EA)	N	Se	Th	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
51	LH-4	M	4-3 1/4x4		45-2800	133.0		92-2000 (EA)	N	In		CNS			1.25	1.22	.312	.312	.312	.312
52	LH-Master	M	4-4x4 1/2		70-2500	214.0			N	In	L	CNS	1.62	1.75	1.50	1.37	.375	.375	.375	.375
53	Standard	M	4-5 1/2x6 1/2		49- 800	617.7		342- 600 (EA)	N	Se	Th	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
54	Engineers	M	4-6x7		76-1000	791.6		461- 700 (EA)	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
55	LH-6	M	6-3 5/8x4 1/4		64-2200	282.0		173- 550 (EA)	N	In	L	CNS	1.68	1.56	1.50	1.37	.312	.312	.375	.375
56	LH-6 DeLuxe	M	6-4x4 1/2		120-3000	320.0		226-2500 (EA)	N	In	L	CNS	1.75	1.62	1.50	1.37	.356	.356	.375	.375
57	LH-Super	M	6-4x4 1/2		132-3200	339.0		132-3200 (EA)	N	In	L	CNS	1.75	1.62	1.50	1.37	.375	.375	.375	.375
58	125 Mystic	M	6-4 5/8x5 1/2		130-1800	584.7		379- 900 (EA)	N	Se	L	CNS	2.25	2.25	2.00	2.00	.375	.375	.437	.437
59	175 Mystic	M	6-5 5/8x6 1/2		175-1535	1012.8		640-1100 (EA)	N	Se	L	CNS	2.68	2.68	2.31	2.31	.437	.437	.500	.500
60	Engineers	M	6-6x7		118-1000	1187.5		650- 925 (EA)	N	Se	L	CNS	2.68	2.50	2.31	2.12	.375	.375	.500	.500
61	LH-Atom	M	6-3 5/8x4 1/4		90-3000	282.0			S	In	L	CNS	1.75	1.62	1.50	1.37	.312	.312	.375	.375
62	LH-Atom Special	M	6-3 5/8x4 1/4		100-3000	282.0			S	In	L	CNS			1.50	1.37				
63	LH-Super Special	M	6-4x4 1/2		145-3000	339.0			S	In	L	CNS	1.81	1.68	1.50	1.37				
64	La Roi D201	Tr,Ind	4-4x4	47.5-2000	45.5-2000	201.0	5.43	140-1200 (EA)	W	In	I	2112	1.68	1.50	1.37	1.25	.373	.373	.372	.372
65	D226	Tr,Ind	4-4x4 1/2	54-2000	52-2000	226.0	5.09	166-1200 (EA)	W	In	I	2112	1.68	1.50	1.37	1.25	.373	.373	.372	.372
66	H540	Tr,Ind	8-4 1/2x4 1/4	189-2600	177-2600	540.0	6.70	421-1600 (EA)	W	In	I	2112	1.94	1.80	1.62	1.37	.410	.410	.373	.372
67	TH540	T,B	8-4 1/2x4 1/4	206-3000		540.0	6.70	450-1800 (BE)	W	In	I	2112(x)°	1.94	1.94	1.62	1.37	.410	.410	.373	.373
68	H844	Tr,Ind	8-5 1/4x4 7/8	286-2400	270-2400	844.0	6.70	682-1600 (BE)	W	In	I	21-4N°	2.26	1.79	2.18	1.63	.450	.450	.435	.434
69	TH844	T,B	8-5 1/4x4 7/8	296-2600	265-2600	844.0	6.70	730-1600 (BE)	W	In	I	2112(x)°	2.26	1.79	2.18	1.63	.450	.450	.435	.434
70	F1500	Ind	6-6 1/8x7	215-1200	205-1200	1503.0	5.06	1090- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
71	F1500	Ind	8-6 1/8x7	230-1200	220-1200	1503.0	6.20	1165- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
72	H2000	Ind	8-6 1/8x7	295-1200	275-1200	2004.0	5.06	1485- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
73	H2000	Ind	8-6 1/8x7	300-1200	280-1200	2004.0	6.20	1590- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
74	L3000	Ind	12-6 1/8x7	435-1200	410-1200	3006.0	5.06	2200- 650 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
75	L3000	Ind	12-6 1/8x7	470-1200	435-1200	3006.0	6.20	2360- 700 (BE)	N	Se	I	Sil	2.81	2.81	2.12	2.50	.548	.548	.624	.624
76	L3460	Ind	12-7 1/4x7	595-1350	566-1350	3468.0	4.57	595-1350 (BE)	W	In	I	Sil	3.37	2.94	2.75	2.62	.625	.625	.622	.621
77	L3460	Ind	12-7 1/4x7	660-1350	640-1350	3468.0	6.73	2710- 900 (EA)	W	In	I	Sil	3.37	2.94	2.75	2.62	.625	.625	.622	.621
78	L4000	Ind	12-7 1/2x7 1/2	656-1350	636-1350	4018.0	4.95	2950- 800 (BE)	W	In	I	Sil	3.37	2.94	2.75	2.62	.625	.625	.623	.622
79	L4000	Ind	12-7 1/2x7 1/2	734-1380	713-1350	4018.0	7.00	3305- 800 (BE)	W	In	I	Sil	3.37	2.94	2.75	2.62	.625	.625	.623	.622
80	Mack Magnadyne EN291	T	6-3 5/16x4 5/8	107-2800	100-2800	290.0	6.90	210-1200 (EA)	N	In	L	2112°	2.01	1.53	1.75	1.38	.430	.430	.435	.433
81	Magnadyne EN331	T	6-4x4 5/8	122-2800	114-2800	330.0	6.90	264-1400 (EA)	N	In	L	2112°	2.01	1.53	1.75	1.38	.430	.430	.435	.433
82	Magnadyne EN401	T	6-4 1/16x5 1/8	150-2800	142-2800	401.0	7.29	330-1400 (BE)	N	In	L	Sil(x)°	2.00	1.63	1.75	1.44	.430	.430	.438	.438
83	Thermodyne EN464A	T	6-4 1/16x5	185-2800	167-2800	464.0	6.71	380-1400 (BE)	N	In	I	Sil(x)°	2.10	1.54	1.88	1.38	.471	.471	.438	.438
84	Thermodyne EN707B	T	6-5x6	196-2000	179-2000	707.0	6.42	560-1100 (EA)	N	In	I	Sil(x)°	2.27	1.98	2.06	1.75	.500	.500	.496	.496

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT								CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats													Crank-Pin	MAIN BEARINGS												
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
30	Op	Eat	HG	Al	26	.875x2.92	4	1035	7	26	1046‡	Op	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1¼	440	17 7/16	20 7/16	35 1/16	3,4,5	1
30	Op	Eat	HG	Al	26	.875x2.92	4	1035	7	26	1046‡	Y	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Op	1¼	440	17 7/16	20 7/16	35 1/16	3,4,5	2
45	Op	Eat	HG	Al	31	1.00x2.92	4	3140	8	37	1046‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1¾	590	18 1/16	24 1/16	39	3,4,5	3
45	N	.....	HG	Alt	33.2	1.13x2.84	4	3140	8	43.5	1046	.....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdefg	.....	.....	650	22 1/16	34 1/16	40 17/32	2,3,4	4
45	Op	Eat	HG	Al	35.5	1.00x3.17	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1¼	605	18 1/16	24 1/16	39	3,4,5	5
45	Op	Eat	HG	Al	37.5	1.00x3.26	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1¾	605	18 1/16	24 1/16	39	3,4,5	6
45	N	.....	HG	Alt	40.3	1.13x3.03	4	3140	8	43.5	1046	.....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdefg	.....	.....	650	22 1/16	34 1/16	40 17/32	2,3,4	7
45	Op	Eat	HG	Al	40.5	1.00x3.51	4	3140	8	37	1046‡	Op	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1½	605	18 1/16	24 1/16	39	3,4,5	8
30	Op	Eat	HG	Al	44.5	1.12x3.44	4	3140	8	39.2	1046‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Op	1¾	630	18 1/16	24 1/16	39	3,4,5	9
45	N	.....	HG	Alt	43.4	1.13x3.34	4	3140	8	43.5	1046	.....	2.00x1.31	7	2.50x1.16	2.50x1.16	abcdef	.....	.....	650	22 1/16	34 1/16	40 17/32	2,3,4	10
45	Op	Eat	HG	Al	44	1.12x3.56	4	3140	8 7/16	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1½	811	26 1/16	28 1/16	42 1/16	2,3	11
45	Op	Eat	HG	Al	50	1.12x3.70	4	1035	9 1/16	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1½	820	23 9/16	28 1/16	42 1/16	2,3	12
30	Op	Eat	HG	Al	50	1.31x3.62	4	4140	8 7/16	50	1046‡	Y	2.25x1.50	7	2.62x1.75	2.62x2.75	acg	Op	1¾	825	26 1/16	28 1/16	42 1/16	2,3	13
(h)	Op	Eat	HG	Al	63.5	1.31x3.62	4	3140	9 5/16	76.9	1045‡	Y	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	Op	1220	27 1/16	34 1/16	47 1/16	2	14
(h)	Op	Eat	HG	Al	65	1.31x3.62	4	3140	9 5/16	76.9	1045‡	Y	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	Op	1220	27 1/16	34 1/16	47 1/16	2	15
45	Op	Eat	HG	Al	60	1.25x3.95	5	3140	9 5/16	78	1046‡	Op	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	1¾	1000	26 1/16	32 1/16	46 1/16	2,3	16
45	Op	Eat	HG	Al	63	1.25x4.07	5	3140	9 5/16	78	1046‡	Op	2.62x2.00	7	3.00x1.93	3.00x2.93	acg	Op	1¾	1010	26 1/16	32 1/16	46 1/16	2,3	17
45	Op	Eat	HG	Al	65	1.25x4.07	5	E-4342	9 5/16	97	CS‡	Op	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	1¾	1195	25 7/16	35 1/16	46 1/16	1,2	18
(h)	Op	Eat	HG	Al	66	1.25x4.20	4	E-4342	9 5/16	97	CS‡	Op	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	1¾	1195	25 7/16	35 1/16	46 1/16	1,2	19
(h)	Op	Eat	HG	Al	66	1.50x4.11	4	E-4342	9 5/16	97	CS‡	Y	3.00x2.00	7	3.50x1.93	3.50x2.93	acg	Op	2	1320	27 1/16	36 1/16	47 1/16	1,2	20
30	Op	Eat	HG	Al	98	1.50x4.43	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2	1810	29 1/16	40 1/16	55 1/16	00,0,1	21
30	Op	Eat	HG	Al	108	1.50x4.56	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2	1810	29 1/16	40 1/16	55 1/16	00,0,1	22
30	Op	Eat	HG	Atn	138	1.75x4.56	4	EFS	12	187	CS	.....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2	2360	29 1/16	40 1/16	55 1/16	00,0,1	23
30	Op	Eat	HG	Al	119	1.50x4.81	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2½	1830	29 1/16	40 1/16	55 1/16	00,0,1	24
30	Op	Eat	HG	Atn	150	1.75x4.75	4	EFS	12	187	CS	.....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2½	2370	29 1/16	40 1/16	55 1/16	00,0,1	25
30	Op	Eat	HG	Al	126	1.50x5.06	4	3140	12	166	1046‡	Op	3.00x2.25	7	3.50x2.37	3.50x3.50	acg	Op	2½	1830	29 1/16	40 1/16	55 1/16	00,0,1	26
30	Op	Eat	HG	Atn	159	1.75x5.00	4	EFS	12	187	CS	.....	3.31x2.25	7	3.75x2.37	3.75x3.50	acg	Op	2½	2380	29 1/16	40 1/16	55 1/16	00,0,1	27
45	N	.....	HG	Cl	20.0	.688x2.19	3	1035	5	15.4	1046‡	Y	1.50x.870	3	1.82x1.30	1.62x1.34	acdg	Own	¾	279*	16 1/16	25 1/16	26 1/16	5	28
45	N	.....	HG	Al	13.9**	.919x2.49	3	1040	7 1/16	33.2	1046	.....	1.75x1.56	3	2.13x1.59	2.13x1.85	acdfg	C-Z	1/16	525*	20 1/16	33 1/16	30 5/16	4	29
(n)	E	St	HG	Al	20.4**	.875x2.95	4	1046	.....	.....	1046	.....	2.30x1.50	3	2.56x1.75	2.56x1.84	acg	Own	1¼	700*	18 1/16	34 1/16	33 1/16	4	30
45	E	HI	HG	Al	53.0	1.31x3.25	4	1040	10	93.0	1046‡	N	2.56x1.93	7	2.81x1.93	2.81x1.81	acdfg	Own	1¼	1010*	20 1/16	38 1/16	37	2	31
30	E	DC	HG	Al	32.0	.875x2.95	3	1037	6 11/16	40.6	1046	Y	2.38x1.16	4	2.75x1.69	2.75x2.17	abcdfg	Zen	1¼	810*	21 1/16	33 1/16	41 3/16	3	32
30	E	DC	HG	Al	32.0	.875x2.95	3	1037	6 11/16	40.6	1046	Y	2.38x1.16	4	2.75x1.69	2.75x2.17	abcdfg	Zen	1¼	810*	21 1/16	33 1/16	41 3/16	3	33
45	E	St	HG	Al	41.0	.922x3.20	4	8632	8 1/16	43.0	1046	Y	2.13x1.19	4	2.70x1.40	2.70x1.62	abcdfg	Zen	1¼	984*	22 1/16	36 1/16	42 1/16	3	34
44	E	St	HG	Al	62.0	1.11x3.80	4	8632	9	61.0	1046‡	Y	2.75x1.38	7	3.25x1.66	3.25x2.37	abcdfg	Zen	1½	1240*	25 1/16	37 1/16	47 5/16	1	35
44	E	St	HG	Al	57.0	1.11x3.80	4	8632	9	61.0	1046	Y	2.75x1.38	7	3.25x1.81	3.25x2.37	abcdfg	Zen	1½	1250*	25 1/16	37 5/16	47 1/16	1	36
45	N	Sil	HG	Al	119.2	1.88x5.00	5	1040	13 1/16	253.5	1046	Y	3.63x2.38	7	4.13x1.75	4.13x1.75	abcdfg	Ens	2½	3825*	32	55 1/16	71 1/16	0	37
44	E	St	HG	Al	45.0	1.11x3.80	4	8632	9	61.0	1048	Y	2.75x1.38	7	3.25x1.81	3.25x2.37	abcdfg	Zen	1½	1245*	25 1/16	37 5/16	47 5/16	1	38
30	N	.....	HG	Cl	19	.687x2.18	3	CS	5 1/16	15	CS	N	1.50x1.00	3	2.00x1.37	2.00x1.31	acdr	Zen	¾	300*	18 11/16	17 5/16	29 1/16	.....	39
45	N	.....	HG	Al	12	.812x2.78	3	MS	9 1/16	34	1040	Y	1.93x1.31	3	2.33x1.75	2.33x1.92	acdr	Zen	1¼	495*	21 1/16	24 1/16	38	.....	40
45	N	.....	HG	Al	12	.812x2.78	3	MS	9 1/16	34	1040	Y	1.93x1.31	3	2.33x1.75	2.33x1.92	acdr	Zen	1¼	495*	21 1/16	24 1/16	38	.....	41
30	N	.....	HG	Al	24	.875x2.92	4	CS	7	26	CS	N	2.00x1.25	7	2.50x1.93	2.50x1.87	acdr	Zen	1½	620*	24	24 1/16	42 1/16	.....	42
30	N	.....	HG	Al	40	1.00x3.51	4	CS	8	38	CS	N	2.00x1.50	7	2.50x2.12	2.50x1.37	acdr	Zen	1¾	925*	21 11/16	27 1/16	52 5/16	.....	43
45	N	.....	HG	Al	80	1.12x3.62	4	CS	9	51	CS	Y	2.25x1.50	7	2.63x2.75	2.63x1.75	acdr	Zen	2	1125*	24 1/16	29 5/16	56 1/16	.....	44
45	N	.....	HG	Ale	82	1.25x4.50	4	DFS	11	80	CS	Y	2.25x2.23	7	2.50x3.91	2.50x2.62	abcdgr	Zen(2)	1¾	1570*	26 1/16	34 1/16	69 1/16	.....	45
45	N	.....	HG	Al	82	1.25x4.50	4	CNS	11	184	CNS	Y	2.75x2.25	7	3.00x3.84	3.00x2.25	acdefg	Zen(2)	2	2100*	27	40 1/16	77	4,2,0	46
45	N	.....	SB	Ale	82	1.25x4.50	4	CNS	11	184	CNS	Y	2.75x2.25	7	3.00x3.84	3.00x2.25	abcdgr	Zen	2	2700*	42 1/16	43 1/16	75 11/16	.....	47
30	N	.....	HG	Al	26	.875x2.92	4	1035	7	26	1046	.....	2.00x1.25	7	2.50x1.31	2.50x1.93	acdeg	Zen	1½	630	24	24 1/16	40	.....	48
30	N	.....	HG	Al	44	1.12x3.44	4	3140	8	39	1046	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	acdeg	Zen	2	930	21 11/16	27 5/16	52 5/16	.....	49
45	.....	.....	HG	Cl	179	1.37x5.00	4	AS	12 1/16	96	CNS	N	1.87x2.75	4	2.25x5.00	2.25x4.00	acg	Zen	1½	1450	25	22 1/16	60 1/16	.....	50
30	.....	.....	HG	Al	.....	.750x2.81	3	AS	6 1/16	.....	CNS	N	1.87x2.75	4	.....	.....	acg	Zen	1	440	17 1/16	14 5/16	40 1/16	.....	51
30	N	.....	HG	Al	40	1.00x3.50	4	AS	8	36	CNS	.....	2.00x1.50	5	2.50x1.31	2.50x2.12	acdg	Zen	1¾	795	20	26 1/16	38 1/16	.....	52
45	E	Spec	HG	Cl	179	1.37x5.00	4	AS	12 1/16	96	CNS	N	1.87x2.75	5	2.25x5.00	2.25x4.00	acg	Zen	1½	1750	25 5/16	22 1/16	68 1/16	.....	53
45	E	Spec	HG	Cl	204	1.50x5.50	4	AS	13 1/16	172	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	acdg	Zen	.....	2290	29 1/16	24	75	.....	54
30	.....	.....	HG	Al	.....	1.00x3.50	3	AS	8	.....	CNS	N	2.75x2.75	5	3.00x3.50	3.00x3.50	acdg	Zen	1¼	830	21 1/16	17	51	.....	55
30	E	Spec	HG	Al	40	1.00x3.50	4	DFS	8	36	Spec	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acg	Zen	1½	820	21 1/16	25	51	.....	56
30	.....	.....	HG	Al	98	1.37x3.87	4	Dur	8	38	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdeg	Zen	1¾	840	21 1/16	25	47	.....	57
45	.....	.....	HG	Cl	104	1.37x4.12	4	Dur	12 1/16	68	CNS	N	2.25x2.37	7	2.75x3.25	2.75x2.12	acdg	Hol	.....	1700	24 1/16	27 3/16	66	.....	58
45	.....	.....	HG	Cl	176	1.50x5.12	4	AS	13 1/16	164	CNS	N	2.75x2.75	7	3.00x3.37	3.00x3.25	acdg	Hol	.....	2480	24 1/16	29 5/16	78 1/16	.....	59
45	E	Spec	HG	Cl	204	1.50x	4	AS	13 1/16	172	CNS	N	2.75x2.75	7	3.00x3.50	3.00x3.50	abcdg	Zen(2)	1¾	2950	31 1/16	24	92	.....	60
45	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	.....	1½	876	20	25	47	.....	61
45	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	Zen	1½	876	20	25	47	.....	62
.....	.....	.....	HG	Al	40.0	1.00x3.50	4	DFS	8	36.0	CNS	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdg	.....	2	916	20	25	47	.....	63
45	E	T-12	HG	Al	38.0	1.00x3.43	4	1040	7½	43.0	1045	N	2.37x1.75	3	2.43x1.62	2.48x1.94	acdf	Zen	1	580	20	31	34 1/16	4	64
45	E	T-12	HG	Al	38.0	1.00x3.43	4	1040	8	44.0	1046	N	2.37x1.75	3	2.44x1.62	2.47x1.94	acdf	Zen	1	580	20	30	34 1/16	2,4	65
45	E	T-12	HG	Al	62.0	1.25x3.93	4	1040	8 1/16	49.0	1046	Y	2.75x2.75	5	3.25x1.12	3.25x1.12	acdef	Zen	1¼	1300	30 5/16	39 1/16	42 5/16	1,2	66
45	Bo	Sil°	HG	Al	62.0	1.25x3.93	4	1040	8 1/16	49.0	1045	Y	2.75x2.75	5	3.25x1.12	3.25x1.12	acdef	Zen	2	1355	30 5/16	43	44 5/16	2	67
45	E	Sil°	HG	Al	99.0	1.50x4.56	4	1040	9 5/16	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Zen	1¾	1870*	33 1/16	49	49 1/16	0,1	68
45	E	Sil°	HG	Al	99.0	1.50x4.56	4	1040	9 5/16	70.4	1046	Y	3.25x3.13	5	3.75x1.39	3.75x1.39	acdef	Zen	1¾	1900*	33 1/16	46	48 5/16	1	69
45	E	T-12	HG	Al	205.0	1.75x6.12	4	1045	14	236.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Zen(2)	1½	3750	43	59	80	0,00	70
45	E	T-12	HG	Al	227.0	1.75x6.12	4	1045	14	236.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Ens(2)	1¾	3750	43	59	80	0,00	71
45	E	T-12	HG	Al	205.0	1.75x6.12	4	3140	15	240.0	1045	Y	3.50x3.75	3	3.93x5.25	3.93x5.25	acdf	Zen(2)	2	3900	45	65	84	00	72
45	E	T-12	HG	Al	227.0	1.75x6.12	4	3140	15	240.0	1045	Y	3.50x3.75	3	3.93x5.25	3.93x5.25	acdf	Ens	3	3900	45	67	84	00	73
45	E	T-12	HG	Al	205.0	1.75x6.12	4	3140	15	240.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Zen(4)	1¾	5300	45	65	78	00	74
45	E	T-12	HG	Al	227.0	1.75x6.12	4	3140	15	240.0	4140	N	3.50x3.75	4	3.93x5.25	3.93x5.25	acdf	Ens	3½	5300	45	65	78	00	75
45	E	3140°	HG	Al	256.0	2.25x6.37	4	1040	15	282.0	1046	Y	5.00x4.75	6	5.50x2.38	5.50x4.31	acdef	Zen(4)	2	10300	49	75	99 5/16	00	76
45	Bo	3140°	HG	Al	256.0	2.25x6.37	4	1040	15	282.0	1046	Y	5.00x4.75	6	5.50x2.38	5.50x4.31	acdef	Ens(2)	3½	10300	49	74 1/16	99 5/16	00	77
45	E	3140°	HG	Al	263.0	2.25x6.36	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Zen(4)	2	11500	49	75	130 1/16	00	78
45	Bo	3140°	HG	Al	263.0	2.25x6.36	4	1040	15	282.0	1046	Y	5.00x4.75	8	5.50x2.38	5.50x4.31	acdef	Ens(2)	3½	15000	49	47 1/16	130 1/16	00	79
(h)	E	Nif°(x	HG	Al	47	1.12x3.18	5	4130	10 1/16	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.00x2.12	acdefg	Zen	1¼	920	28 1/16	35 1/16	44 5/16	3	80
(h)	E	Nif°	HG	Al	52	1.12x3.45	5	4130	10 1/16	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.00x2.12	acdefg	Zen	1¼	920	28 1/16	35 1/16	44 5/16	3	81
(h)	E	Nif°(x	HG	Al	51	1.13x3.45	5	4130	10 1/16	64	1046‡	Y	2.38x1.34	7	3.00x1.41	3.50x2.13	abcdfg	Zen	1¼	1070	28 1/16	36 1/16	45 5/16	3	82
(h)	E	Nif°(x	HG	Al	72	1.31x3.56	4	4130	10 1/16	88.8	1046‡	Y	2.75x1.58	7	3.50x1.69	3.50x2.22	abcdfg	Zen	1½	1522	26	43 1/16	49 1/16	2	83
(h)	E	Nif°(x	HG	Alt	91	1.43x4.43	5	4130	11 1/16	116	1050‡	Y	3.00x1.91	7	4.00x1.57	4.00x2.56	acdefg	Zen	1¾	1902	28.06	51.75	53 1/16	1	84

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Minneapolis-Moline 206H-4	Ind,Tr	4-3½x5	40-1550	38-1550	206.0	7.30		N	Se	I	.....	1.47	1.38	1.25	1.17	.470	.355	.341	.341
2	383C-4	Ind,Tr	4-4¼x5	56-1300	51-1300	283.7	6.30	230-1000 (BE)	N	Se	I	.....	1.72	1.59	1.50	1.37	.497	.495	.434	.434
3	403C-4	Ind,Tr	4-4½x6	75-1300	68-1300	403.2	5.70	335- 900 (BE)	N	Se	I	.....	1.72	1.59	1.50	1.37	.497	.495	.434	.434
4	425A-6A	Ind	6-4¼x5	83-1400	76-1400	425.5	6.30	325- 900 (BE)	N	Se	I	.....	1.72	1.59	1.50	1.37	.497	.495	.434	.434
5	605A-6A	Ind	6-4½x6	105-1200	96-1200	604.8	5.70	465- 900 (BE)	N	Se	I	.....	1.72	1.59	1.50	1.37	.497	.495	.434	.433
6	1210-12A	Ind	12-4½x6	200-1200	180-1200	1210.0	5.70	920- 900 (BE)	N	Se	I	.....	1.72	1.59	1.50	1.37	.497	.495	.434	.434
7	V206B-4	Tr	4-3½x5	38-1500	37-1500	206.0	6.10	145-1100 (BE)	N	Se	I	.....	1.47	1.38	1.25	1.17	.355	.355	.341	.341
8	800-6A	Ind	6-5⅛x6	149-1200	192-1200	800.0	5.30	620-1100 (BE)	N	Se	I	2112°	1.84	1.72	1.62	1.50	.497	.495	.434	.434
9	1600-12A	Ind	12-5⅛x6	246-1200	225-1200	1600.0	7.60	1080- 900 (BE)	N	Se	I	2112°	1.72	1.59	1.50	1.37	.497	.495	.434	.434
10	Norberg Bluefin Y230	M	6-3⅞x4½	.....	95-3200	230.0	7.29	173-1800 (EA)	N	In	L	2112	1.61	1.39	1.50	1.25	.311	.311	.310	.310
11	Arrow 230	M	6-3⅞x4½	.....	95-3200	230.0	7.29	173-1800 (EA)	N	In	L	2112	1.61	1.39	1.50	1.25	.311	.311	.310	.310
12	Marlin 320	M	6-4x4½	.....	110-2500	320.0	6.84	243-1600 (EA)	N	In	L	2112	1.75	1.62	1.50	1.37	.356	.356	.372	.372
13	Knight 350	M	6-4x4½	.....	155-3200	340.0	7.20	283-1400 (EA)	N	In	L	Aus	1.83	1.68	1.72	1.50	.400	.400	.372	.372
14	Bullet 240	M	6-3⅞x4⅝	.....	110-3400	236.7	7.47	193-1600 (EA)	N	In	L	Aus	1.61	1.39	1.50	1.25	.349	.349	.310	.310
15	Tarpon 330	M	6-4x4½	.....	130-3000	320.4	6.84	239-2400 (EA)	N	In	L	2112	1.83	1.68	1.72	1.50	.356	.356	.372	.372
16	Colt 130	M	4-3½x4	.....	60-3200	132.7	7.50	108-2400 (EA)	N	In	L	2112	1.48	1.36	1.25	1.12	.312	.312	.310	.310
17	Oliver Super 55HC	Tr	4-3½x3⅝	.....	38.5-2000	144.3	7.00	110-1100 (EA)	W	In	I	Sil	1.40	1.26	1.25	1.13	.360	.360	.373	.372
18	Super 66HC	Tr	4-3½x3⅝	.....	38.5-2000	144.0	7.00	.....	W	In	I	Sil	1.40	1.26	1.25	1.13	.360	.360	.373	.372
19	Super 77HC	Tr	6-3½x3⅝	.....	48-1600	216.5	7.00	166-1000 (EA)	W	In	I	Sil	1.40	1.26	1.25	1.13	.313	.281	.373	.372
20	Super 88HC	Tr	6-3⅝x4	.....	58.5-1600	265.1	7.00	204-1000 (EA)	W	In	I	Sil	1.51	1.41	1.38	1.25	.344	.344	.373	.372
21	166HC	Ind	4-3½x3⅝	.....	31-2000	144.0	6.75	112- 800 (EA)	W	In	I	Sil	1.31	1.13	1.18	.995	.224	.204	.373	.372
22	177HC	Ind	6-3½x3⅝	.....	48.5-2000	216.0	6.75	168- 800 (EA)	W	In	I	Sil	1.31	1.13	1.18	.995	.224	.204	.373	.372
23	188HC	Ind	6-3⅝x4	.....	58-2000	265.0	6.75	196- 900 (EA)	W	In	I	Sil	1.41	1.28	1.24	1.12	.359	.362	.373	.372
24	Super 99HC	Tr	6-4x4	.....	69-1675	302.0	6.20	235-1100 (EA)	D	In	I	Sil	1.84	.....	1.68	1.43	.344	.344	.373	.....
25	Super 199HC	Ind	6-4x4	.....	73-2000	302.0	6.20	235-1100 (EA)	D	In	I	Sil	1.84	1.59	1.68	1.43	.344	.344	.373	.372
26	Super 166HC	Ind	4-3½x3⅝	.....	31-2000	144.0	7.00	112- 800 (BE)	W	In	I	Sil	1.41	1.28	1.25	1.13	.344	.344	.373	.372
27	Super 177HC	Ind	6-3½x3⅝	.....	48.5-2000	216.0	7.00	168- 800 (BE)	W	In	I	Sil	1.41	1.28	1.25	1.13	.313	.281	.375	.372
28	Super 188HC	Ind	6-3⅝x4	.....	58-2060	265.0	7.00	196- 900 (BE)	W	In	I	Sil	1.53	.....	1.38	1.38	.344	.344	.373	.372
29	Super 199HC	Ind	6-4x4	.....	73-2000	302.0	6.20	235-1100 (BE)	D	In	I	Sil	1.84	1.59	1.68	1.43	.246	.246	.373	.372
30	Palmer 25	M	1-3½x3½	.....	6-2500	26.0	5.40	6-2500 (EA)	N	Se	L	Sil	1.34	1.34	1.15	1.15	.281	.281	.310	.310
31	60	M	4-2½x2¾	.....	22-3000	59.5	6.50	34-2000 (EA)	N	In	L	CNS	1.10	.910	.980	.790	.222	.222	.310	.310
32	134	M	4-3½x4	.....	60-3000	133.0	7.20	92-2000 (EA)	N	In	L	CNS	1.48	1.35	1.25	1.12	.312	.312	.310	.310
33	240	M	6-3½x4½	.....	115-3200	240.3	6.50	196-1800 (EA)	N	In	I	CNS	1.68	1.52	1.50	1.38	.398	.398	.372	.370
34	264	M	6-3½x4½	.....	125-3400	264.0	6.50	234-2000 (EA)	N	In	I	21-4NS	1.66	1.52	1.50	1.38	.398	.398	.372	.370
35	308	M	6-3½x4½	145-3400	.....	308.0	6.50	274-2000 (EA)	N	In	I	21-4NS	1.81	.....	1.69	.....	.407	.....	.372	.....
36	339	M	6-4x4½	.....	145-3000	339.0	7.50	270-1400 (EA)	N	In	L	Aus	1.83	1.67	1.72	1.50	.356	.356	.373	.373
37	404	M	6-4½x4⅝	.....	165-3000	404.0	6.50	310-1400 (EA)	N	In	L	Aus	1.87	1.75	1.68	1.62	.388	.388	.373	.373
38	Red Wing Arrowhead Twin	M	2-3⅝x4½	11-1100	10-1100	105.0	4.00	54- 800 (EA)	N	Se	L	NCI	1.62	1.62	1.43	1.43	.300	.300	.375	.375
39	Meteor 20	M	4-2½x3½	18-2600	16-2600	61.3	5.70	40-1700 (BE)	N	Se	L	Sil	1.12	.937	1.00	.812	.228	.250	.312	.312
40	Arrowhead 40	M	4-3½x4	36-2600	35-2600	133.0	5.58	92-1200 (EA)	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
41	Arrowhead 50	M	4-3⅝x4½	43-2200	37-2200	186.0	5.50	128- 900 (EA)	N	In	L	Sil	1.56	1.56	1.37	1.37	.281	.281	.375	.375
42	F	M	4-4½x5	39-1400	36-1400	259.0	4.00	142-1000 (EA)	N	Se	L	NCI	1.93	1.93	1.75	1.75	.300	.300	.375	.375
43	Arrowhead 100	M	6-4x4½	86-2800	83-2800	320.0	5.75	210-1000 (BE)	N	In	L	Sil	1.68	1.43	1.50	1.25	.375	.375	.375	.375
44	Reo OA-331	T,B	6-4½x4½	140-3200	128-3200	331.0	6.40	260-1200 (EA)	W	In	I	Sil(x)	2.01	1.80	1.83	1.62	.420	.420	.435	.434
45	OA-292	T,B	6-3⅞x4½	124-3300	110-3300	292.0	6.55	218-1400 (EA)	W	In	I	Sil(x)	2.01	1.80	1.83	1.62	.420	.420	.435	.434
46	OA-255	T,B	6-3⅝x4½	107-3400	93-3400	255.0	6.70	183-1200 (EA)	W	In	I	2112	2.01	1.80	1.83	1.62	.420	.420	.435	.434
47	^OA-331-LPG	T	6-4½x4½	142-3200	130-3200	331.0	8.20	258-1800 (BE)	W	In	I	2112	2.00	1.80	1.83	1.63	.420	.420	.438	.438
48	OH-160	T,B	6-4½x4½	160-3200	148.5-3200	331.0	6.73	290-1400 (BE)	W	In	I	Sil(x)	2.00	1.80	1.83	1.63	.420	.440	.438	.438
49	^255-OA-LPG	T	6-3⅝x4½	100-3400	86-3400	255.0	7.15	182-1600 (BE)	W	In	I	2112	2.00	1.80	1.83	1.63	.420	.420	.438	.438
50	^OH-160-LPG	T	6-4½x4½	160-3300	146-3200	331.0	8.20	280-1200 (BE)	W	In	I	Sil	2.00	1.79	1.83	1.62	.225	.238	.438	.438
51	OV-195	T	8-3⅞x4½	195-3200	180-3200	390.0	7.30	345-2200 (BE)	W	In	I	Sil(x)	2.00	1.80	1.83	1.63	.441	.466	.438	.438
52	OV-220	T	8-4½x4½	220-3200	203-3200	440.0	7.30	405-2000 (BE)	W	In	I	Sil(x)	2.00	1.80	1.83	1.63	.441	.466	.438	.438
53	^OV-220-LPG	T	8-4½x4½	220-3200	203-3200	440.0	8.50	405-2000 (BE)	W	In	I	Sil	2.00	1.80	1.83	1.63	.441	.466	.438	.438
54	(w)OA-255	Ind	6-3⅝x4½	87-2500	78-2500	255.0	6.70	189-1100 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63	.....	.....	.438	.438
55	OA-292	Ind	6-3⅞x4½	103-2500	95-2500	292.0	6.55	224-1400 (BE)	W	Se	I	2112	2.00	1.80	1.88	1.63	.....	.....	.438	.438
56	(w)OA-331	Ind	6-4½x4½	122-2500	116-2500	331.0	6.40	264-1600 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63	.....	.....	.438	.438
57	(w)OH-331 Hi-Output	Ind	6-4½x4½	134-2500	128-2500	331.0	6.73	290-1400 (BE)	W	Se	I	2112	2.00	1.80	1.83	1.63	.....	.....	.438	.438
58	OV-390	Ind	8-3⅞x4½	164-2500	157-2500	390.0	7.30	345-2200 (BE)	W	Se	I	Sil	2.00	1.80	1.83	1.63	.....	.....	.438	.438
59	(w)OV-440	Ind	8-4½x4½	189-2500	182-2500	440.0	7.30	405-2000 (BE)	W	Se	I	Sil	2.00	1.80	1.83	1.63	.....	.....	.438	.438
60	Scripps 36	M	4-3½x4	.....	50-3200	134.0	5.50	100-2000 (EA)	N	In	L	Sil	1.48	1.35	1.25	1.12	.250	.250	.310	.310
61	96-97	M	6-3½x4½	.....	95-3000	230.0	7.20	187-1200 (EA)	N	In	L	Sil	1.80	1.39	1.50	1.25	.311	.311	.310	.310
62	6-110	M	6-3½x4½	.....	110-3600	236.0	6.50	195-2400 (EA)	N	In	L	Aus	1.61	1.39	1.50	1.25	.311	.311	.310	.310
63	104-105	M	6-4x4½	.....	110-3000	320.0	5.62	239-1700 (EA)	N	In	L	Sil	1.75	1.62	1.50	1.37	.359	.359	.373	.373
64	6-339	M	6-4x4½	.....	140-3200	339.0	6.80	295-2000 (EA)	N	In	L	Sil	1.83	1.67	1.72	1.50	.356	.356	.373	.373
65	152-153	M	8-4½x5½	.....	185-3000	447.0	7.10	390-1600 (EA)	N	Se	L	Sil	2.37	2.25	.....	.....	.375	.375	.437	.437
66	154, 5, 6, 7	M	8-4½x5½	.....	156-3000	447.0	6.20	330-1800 (EA)	N	Se	L	Sil	2.25	2.25	.....	.....	.375	.375	.437	.437
67	168-169	M	8-4½x5⅝	.....	175-2400	549.0	5.75	410-1600 (EA)	N	Se	L	Sil	2.37	2.28	.....	.....	.406	.375	.437	.437
68	178-179	M	8-4½x5⅝	.....	200-2400	611.0	5.75	500-1600 (EA)	N	Se	L	Sil	2.37	2.28	.....	.....	.406	.375	.437	.437
69	208-209	M	8-5x5⅝	.....	225-2400	678.0	6.25	540-1800 (EA)	N	Se	L	Sil	2.50	2.37	.....	.....	.406	.375	.437	.437
70	302-303	M	12-4½x5½	.....	350-2800	894.0	7.10	790-1800 (EA)	N	Se	L	Sil	2.37	2.25	.....	.....	.375	.375	.437	.437
71	304-305	M	12-4½x5½	.....	250-2400	894.0	6.20	640-1700 (EA)	N	Se	L	Sil	2.28	2.25	.....	.....	.375	.375	.437	.437
72	306-307	M	12-4½x5½	.....	290-2600	894.0	6.20	660-1800 (EA)	N	Se	L	Sil	2.25	2.25	.....	.....	.375	.375	.437	.437
73	4-80	M	4-3½x4	.....	60-3200	134.0	6.80	100-2000	N	In	L	Sil	1.49	1.35	1.25	1.12	.250	.250	.310	.310
74	Sterling Viking II-TC-6	Tr,Ind	6-8x9	.....	450-1200	2714.0	‡‡	2015- 900 (EA)	W	Se	I	Sil	2.59	2.59	.....	.....	.556	.556	.557	.557
75	Viking II-TC-6	Tr,Ind	6-8x9	.....	345- 900	2714.0	‡‡	2015- 900 (EA)	W	Se	I	Sil	2.59	2.59	.....	.....	.556	.556	.557	.557
76	Viking II-T-6	M	6-8x9	.....	600-1200	3619.0	5.20	2685- 900 (EA)	W	Se	I	Sil	2.59	2.59	.....	.....	.556	.556	.557	.557
77	Viking II-TC-6	Tr,Ind	8-8x9	.....	600-1200	3619.0	‡‡	2685- 900 (EA)	W	Se	I	Sil	2.59	2.59	.....	.....	.556	.556	.557	.557
78	Viking II-TC-6	Tr,Ind	8-8x9	.....	460- 900	3619.0	‡‡	2685- 900 (EA)	W	Se	I	Sil	2.59	2.59	.....	.....	.556	.556	.557	.557
79	Petrel-LC-6	Ind	6-5½x6	.....	210-2000	780.0	6.00	550-1700 (EA)	N	Se	L	Sil	2.25	2.25	.....	.....	.475	.475	.437	.437
80	Petrel-L-6	M	6-5½x6	.....	258-2500	780.0	6.00	550-1700 (EA)	N	Se	L	Sil	2.25	2.25	.....	.....	.563	.563	.437	.437

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

GASOLINE ENGINES—*continued*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats													Crank-Pin	MAIN BEARINGS											
Angle (Deg.)	Inserts Used	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure to—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	E	St	HG	CI	53.3	.990x3.01	4	DFS	8¾	50.0	DFS	N	2.62x1.50	3	2.75x1.75	3.00x2.18	acefgt	MaS	1	u670	20	35½	36	4	1
45	E	St	HG	CI	89.0	1.25x3.75	4	DFS	10	99.0	DFS	N	2.57x2.50	3	2.91x2.68	2.91x3.50	acdefgt	MaS	1¼	u1150	24⅞	40⅝	42⅛	2	2
45	E	St	HG	Al	63.3	1.25x3.93	4	DFS	11¼	123.0	DFS	N	2.75x2.38	3	2.91x2.68	2.91x3.50	acdefgt	MaS	1¼	u1250	24⅛	43⅛	42	2	3
45	E	St	HG	CI	89.0	1.25x3.75	4	DFS	10	99.0	DFS	Y	2.57x2.50	4	2.91x2.69	2.91x3.50	acdefgt	Zen	1½	u1800	24⅝	42⅝	56	2	4
45	E	St	HG	CI	122.0	1.25x4.13	4	DFS	11¼	123.0	DFS	Y	2.75x2.38	4	2.91x2.69	2.91x3.50	acdefgt	Zen	1½	u1900	26⅝	45½	57	1	5
45	E	St	HG	CI	122.0	1.25x4.13	4	DFS	11¼	123.0	DFS	Y	2.75x2.00	4	2.91x2.18	2.91x3.50	acdegft	Zen(2)	1½	6150	45⅝	70½	114		6
45	E	St	HG	CI	53.5	.990x3.01	4	DFS	8¾	50.0	DFS	N	2.62x1.50	2	60RV02	SAE 70	cefgt	MaS	1	625	33	34	31		7
45	E	St	HG	Al	112.0	1.75x4.53	4	DFS	11¼	136.0	DFS	Y	3.24x2.38	4	3.49x2.53	3.49x3.12	acdefgt	Ens	1⅝	2400	28¾	47⅛	57	1	8
45	E	St	HG	Al	112.0	1.75x4.53	4	DFS	11¼	145.0	DFS	Y	3.24x2.38	4	3.49x2.53	3.49x3.12	acdefgt	Ens(2)	1½	.....	45⅞	72½	114		9
30	N	.....	HG	Al	26	.875x2.90	3	1035	7	26	3140‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	714	24¼	23½	43¼	6	10
30	N	.....	HG	Al	26	.875x2.90	3	1035	7	26	3140‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	780	24¼	23½	45⅝	6	11
30	N	.....	HG	Al	40.5	1.00x3.50	3	1040	8	37	3140‡	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acdgr	Zen	1½	920	24¼	25	49½	6	12
30	N	.....	HG	Al	44.5	1.12x3.44	3	1035	8	39.2	3140‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	abcdgr	Zen	2	935	24¼	25	47½	6	13
30	N	.....	HG	Alt	25	.875x2.90	3	1035	7	26	3140	Y	1.98x1.25	7	2.50x1.31	2.50x1.93	abcdgr	Zen	1½	744	24¼	23½	43¼	6	14
30	N	.....	HG	Al	40.5	1.00x3.50	3	1040	8	37	3140‡	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	acdgr	Zen	1⅝	925	24¼	25	47½	6	15
30	N	.....	HG	Alt	21.0	.750x2.83	3	3140	6 2/16	22.0	Ste‡	.....	1.75x1.12	3	1.98x1.62	1.98x1.37	acgr	Zen	1¼	456*	24½	21½	31⅜	.....	16
44½	N	.....	HG	Alst	35	1.25x2.75	4	1045	6⅝	43	1045	Y	2.25x1.38	3	2.25x1.63	2.25x1.63	acf	M-C	7/8	466	18½	28¼	30⅞	.....	17
44½	N	.....	HG	Alst	35	1.25x2.75	4	1045	6⅝	43	1045	Y	2.25x1.38	3	2.25x1.63	2.25x1.63	acf	M-C	7/8	464	18½	28¼	30⅞	.....	18
44½	N	.....	HG	Alst	35	1.25x2.75	4	1045	6⅝	43	1045	N	2.25x1.38	4	2.25x1.63	2.25x1.63	acf	M-Z	1	632	18½	27¾	39⅞	.....	19
44½	N	.....	HG	Alt	.....	1.25x3.00	4	1045	6⅝	47	1045	N	2.44x1.38	4	2.63x1.75	2.63x1.75	acf	M-Z	1	682	18½	27⅞	41½	.....	20
45	N	.....	HG	Al	61	1.25x2.75	4	1045	6⅝	31	1045	.....	2.00x1.38	3	2.25x1.63	2.25x1.44	afg	MaS	½	630	19	38¼	30⅞	4	21
45	N	.....	HG	CI	62	1.25x2.75	4	1045	6⅝	31	1045	.....	2.00x1.38	4	2.25x1.75	2.25x1.63	afg	MaS	1	865	22	39⅝	39⅞	3	22
45	N	.....	HG	CI	72	1.25x2.75	4	1045	6⅝	41	1045	.....	2.25x1.38	4	2.63x1.88	2.63x1.76	afg	MaS	1	905	22	40	41½	3	23
45	E	A	HG	Al	96	1.25x3.44	4	1045	6⅝	41	1045	.....	2.63x1.38	4	2.63x1.56	2.63x1.56	abcdfg	MaS	1¼	800	21¼	30	43⅛	.....	24
45	E	A	HG	Al	96	1.25x3.44	4	1045	6⅝	41	1045	.....	2.63x1.38	4	2.63x1.56	2.63x1.56	abcdfg	MaS	1¼	800	22	42⅛	42⅛	3	25
45	N	.....	HG	Al	35.0	1.25x2.75	4	1045	6⅝	43.0	1045	.....	2.25x1.38	3	2.25x1.44	2.25x1.44	acf	M-C	7/8	515	19	28½	30 2/16	3,4	26
45	N	.....	HG	Al	35.0	1.25x2.75	4	1045	6⅝	43.0	1045	.....	2.25x1.38	4	2.25x1.44	2.25x1.44	acfg	MaS	⅞	.....	22	29⅛	39⅞	3,4	27
45	N	.....	HG	Al	62.0	1.25x3.00	4	1045	6⅝	47.0	1045	.....	2.44x1.38	4	2.63x1.50	2.63x1.50	acfg	MaS	1	.....	22	30⅛	42⅛	3,4	28
(v)	E	Al	HG	Al	66.0	1.25x3.44	4	1045	6⅝	41.0	1045	.....	2.25x1.38	4	2.63x1.56	2.63x1.56	abcdfg	MaS	1	725	22	30⅛	43⅛	3	29
45	N	.....	HG	Al	14½	.75x2.75	3	1040	8	23½	Al	Y	1.25x1.31	2	(j)	(j)	PS	Zen	¾	u180	15	18¾	24	.....	30
45	N	.....	HG	CI	20	.688x2.19	3	.....	5	16	C1045	.....	1.50x.875	3	1.62x	1.62x	acd	Zen	⅝	350	21	.....	28¾	N	31
30	N	.....	HG	Al	20½	.75x2.87	3	3140	6 2/16	23½	CS‡	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acd	Zen	1¼	u445	19	20½	39	.....	32
30	E	Duc	HG	Al	.....	.875x2.95	4	.....	6	.....	C1046	.....	2.38x1.50	4	2.75x1.38	2.75x1.94	acdf	Zen	1½	850	24½	28	46	6	33
30	E	SAC	HG	Al	.....	.875x2.95	4	SF	6	.....	1046	.....	2.38x1.50	4	2.75x1.38	2.75x1.94	acdfg	Zen	1½	850	24½	28	46	6	34
15	E	SAC	HG	Al	40.2	.919x3.20	4	SF	8⅛	.....	1046	.....	2.13x1.44	4	2.70x	2.70x	acdfg	Zen	1⅝	920	24½	29⅛	46½	6	35
30	N	.....	HG	Al	44½	1.12x3.44	3	1035	8	39.2	CS‡	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acd	Zen	2	990^	20	26½	54	4	36
45	N	.....	HG	Al	50	1.12x3.44	4	1035	8	39.2	CS‡	.....	2.00x1.50	7	2.50x1.31	2.50x2.12	acd	Zen	2	1375^	21	29	59	3	37
45	N	.....	HG	CIA	64	1.10x3.25	3	1045	8½	43	1045	N	1.50x2.12	2	1.50x3.00	1.50x3.00	Splash	Str	1	415	19½	22⅛	36¼	.....	38
45	N	.....	HG	Al	8	.625x2.12	3	1045	6	14	1045	N	1.56x1.25	2	ND3207	ND3207	adg	MaS	¾	240	18¼	19½	27 1/16	.....	39
45	E	CA	HG	CI	30	.875x2.75	3	1045	7¼	29	1045	N	1.75x1.25	3	2.12x1.43	2.12x1.18	abcdg	Zen	1	490	21⅝	24⅞	35	.....	40
45	E	CA	HG	CI	45	1.10x3.06	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x2.50	2.00x1.87	abcdg	Zen	1	610	19½	26¼	41	5	41
45	N	.....	HG	CIA	69	1.10x3.56	4	1045	10⅝	66	1045	N	2.00x2.25	3	2.00x4.18	2.00x3.50	acg	Str	1¼	830	20¼	29⅛	54⅝	.....	42
45	E	CA	HG	Al	46	1.00x3.85	4	1045	8	40	1045	N	2.00x1.50	7	2.62x2.00	2.62x1.25	abcdg	Zen	1¼	1016	22½	28¼	53⅛	.....	43
30	E	St	HG	Al	40	1.12x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Zen	1¼	872	25½	34½	45⅞	3	44
30	E	St	HG	Al	34.7	1.12x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Zen	1¼	830	25½	34½	45⅞	3	45
30	E	Ste	HG	Al	31.9	1.12x3.11	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Car	1½	820	25½	34½	45⅞	3	48
30	Bo	♦	HG	Al	41.4	1.13x3.59	4	1340	7¼	56	1045	.....	2.18x1.62	7	2.51x1.62	2.51x1.62	acdfg	Ens	1⅝	914	25½	34½	45⅞	3	47
30	E	St	HG	Als	42	1.13x3.59	4	1340	7¼	52	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdfg	Zen	1¼	963*u	24½	33⅞	45⅞	3	48
30	Bo	Ste	HG	Al	29.9	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.18x1.38	7	2.50x1.34	2.50x1.34	acdfg	Ens	1½	872*u	25½	34½	45⅞	3	49
30	Bo	♦	HG	Al	41.4	1.13x3.54	4	1340	7¼	52	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdfg	Alg	1¼	995	24½	34½	45⅞	3	50
30	Bo	♦	HG	Al	39.2	1.06x3.37	4	1340	7⅝	45	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Car	.....	1211	27⅝	36⅝	39½	2	51
30	Bo	♦	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Car	.....	1211	27⅝	36⅝	39½	2	52
30	Bo	♦	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdfg	Alg	.....	1262*	27⅝	36⅝	39½	2	53
30	E	St	HG	Al	31.9	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Car	1½	750	21	33	47	3	54
30	E	St	HG	Al	34.7	1.13x3.11	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Zen	1¼	750	21	33	47	3	55
30	E	St	HG	Al	37.8	1.13x3.59	4	1340	7¼	50.2	1045	.....	2.17x1.38	7	2.50x1.34	2.50x1.34	acdefg	Zen	1¼	760	21	33	47	3	56
30	E	St	HG	Al	42.0	1.13x3.59	4	1340	7¼	52.0	1045	.....	2.31x1.30	7	2.75x1.30	2.75x1.30	acdefg	Zen	1¼	875	21	33	47	3	57
30	E	St	HG	Al	39.2	1.06x3.37	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdefg	Car	.....	1100	28	37⅛	34½	2	58
30	E	St	HG	Al	39.2	1.06x3.59	4	1340	7⅝	45.0	CAS	.....	2.50x.927	5	3.00x1.22	3.00x1.71	acdefg	Car	.....	1100	28	37⅛	39½	2	59
30	N	.....	HG	Al	29.5	.750x2.81	3	3140	6 2/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acgr	Zen	1¼	410*	22 1/16	21¾	32¾	6	60
30	N	.....	HG	Al	28	.875x2.90	4	CS	7	26	CS	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acgr	Zen	1½	675*	22⅝	23¼	41½	4	61
30	N	.....	HG	Al	28	.875x2.92	3	1035	7	26	AS	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acg	Zen	1½	675	22⅝	23¼	41½	4	62
45	N	.....	HG	Al	29.5	1.00x3.51	4	1040	8	37	1045	N	2.00x1.50	7	2.50x1.31	2.50x2.12	acgr	Zen	1⅝	980*	22⅝	32⅝	49 1/16	4	63
30	N	.....	HG	Al	40	1.12x3.44	4	AS	8	39.2	CS	Y	2.00x1.50	7	2.50x1.31	2.50x2.12	acgr	Zen	1⅝	990*	22⅝	32⅝	46 1/16	4	64
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅛	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Hol	2	1050*	27¾	32⅞	56¾	.....	65
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅛	70	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Str	2	1150*	24¾	29⅛	56¾	.....	66
45	N	.....	HG	Al	80	1.37x3.84	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	acdr	Zen	2	1525*	29¼	33⅛	66	.....	67
45	N	.....	HG	Al	56	1.37x4.00	4	AS	11¼	84	NS	Y	2.87x2.00	4	3.00x3.00	3.00x3.62	acdr	Zen	2	1525*	29¼	33⅛	66	.....	68
45	N	.....	HG	Al	56	1.37x4.00	4	AS	11¼	84	CS	Y	2.87x2.25	4	3.00x3.00	3.00x3.62	acdr	Zen(2)	2	1525*	29¼	33⅛	66	.....	69
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅛	184‡	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acdr	Hol	2	1750*	35	33½	58½	.....	70
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅛	184‡	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acd	Str(2)	2	1750*	33¾	30⅞	58½	.....	71
45	E	CA	HG	Al	49	1.25x3.68	4	AS	10⅛	184‡	NS	Y	2.75x2.25	4	3.25x2.25	3.25x2.25	acd	Str(2)	2	1750*	33¾	30⅞	58½	.....	72
30	N	.....	HG	Al	29.5	.75x2.80	3	3140	6 2/16	21	1045	N	1.75x1.12	3	2.00x1.56	2.00x1.62	acdeg	Zen	1¼	410	22 1/16	21¾	32¾	6	73
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(3)	2½	7500	45	64⅞	100⅞	00	74
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(3)	2½	7500	45	64⅞	100⅞	00	75
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.37	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9900	44⅛	61⅝	142⅝	.....	76
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9000	45	64⅞	121⅝	00	77
45	E	T-12	Ch	Al	328	2.00x7.00	4	CS	18	416	CNS	Y	4.00x3.12	9	4.00x3.37	4.00x5.50	abcdeg	Zen(4)	2½	9000	45	64⅞	121⅝	00	78
45	E	T-12	HG	Al	91	1.43x4.37	5	1035	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdeg	Zen(2)	1¾	2300	33	41½	59½	1	79
45	E	T-12	HG	Al	91	1.43x4.37	5	1035	12½	113	CNS	Y	2.50x2.12	7	3.00x1.75	3.00x2.87	abcdeg	Zen(2)	1¾	1900	33	34½	73⅝	.....	80

For abbreviations, see pages 272 and 273

For Directory of the Engine Manufacturers listed above, see page 286

Line Number	ENGINE MAKE AND MODEL	Designed for	Number of Cylinders, Bore and Stroke (In.)	MAXIMUM BRAKE Hp. at Specified R.P.M.		Piston Displacement (Cu. In.)	Compression Ratio	Maximum Torque at R.P.M. (Lb. Ft.) with or without Accessories	Cylinder Liners—Type	Crankcase—Upper Half Integral with Cylinders	VALVES									
				With Bare Engine	With Standard Accessories						Arrangement	Exhaust Head Material (S.A.E. No.)	Max. Head Diameter (In.)		Min. Port Diameter (In.)		Lift (In.)		Stem Diameter (In.)	
													Intake	Exhaust	Intake	Exhaust	Intake	Exhaust	Intake	Exhaust
1	Studebaker 1E	T	6-3x4⅜	92-3800	83-3800	185.6	7.50	152-1800 (BE)	N	In	L	2112	1.31	1.28	1.19	1.13	.344	.344	.313	.313
2	2E	T	8-3⅛x2⅞	140-4500	111-3800	224.3	7.50	202-2800 (BE)	N	In	I	2112N	1.66	1.53	1.28	1.16	.359	.359	.344	.344
3	3E	T	8-3⅛x3⅛	156-4500	134-4000	259.2	7.50	236-2600 (BE)	N	In	I	2112N	1.66	1.53	1.28	1.16	.359	.359	.344	.344
4	5E	T	8-3⅛x3⅛	175-4500	146-4000	259.2	7.50	250-3000 (BE)	N	In	I	2112N	1.66	1.53	1.28	1.16	.359	.359	.344	.344
5	Universal Blue Jacket-AFTL	M	2-3x3½		12-2200	49.5	5.79		N	In	L	Sil	1.68	1.68	1.50	1.50	.250	.250	.375	.375
6	Atomic Four-UJ	M	4-2⅛x3½		25-3500	64.5	6.32		N	In	L	Sil	1.21	1.03	1.06	.875	.240	.240	.312	.312
7	Atomic Four-UJVD	M	4-2⅛x3½		25-3500	64.5	6.32		N	In	L	Sil	1.21	1.03	1.06	.875	.240	.240	.312	.312
8	Fisherman-WM	M	1-4½x4½		8-1200	67.6	5.02		N	In	L	Sil	1.87	1.87	1.62	1.62	.250	.250	.375	.375
9	Utility Four-BN	M	4-2⅝x4		25-2500	95.0	4.70		N	In	L	Sil	1.25	1.25	1.12	1.12	.234	.234	.312	.312
10	Blue Jacket Flexifour-BFA	M	4-3x3½		45-3800	99.0	6.54		N	In	L	Sil	1.68	1.68	1.50	1.50	.312	.312	.375	.375
11	Unimite Four-HF	M	4-3¼x4½		65-3100	141.0			N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
12	Unimite Four-HFVD	M	4-3¼x4½		65-3100	141.0			N	In	L	Aus	1.48	1.35	1.25	1.12	.250	.250	.310	.310
13	Blue Jacket Six-AMS	M	6-3x3½		60-3500	148.5	6.54		N	In	L	Sil	1.68	1.68	1.50	1.50	.312	.312	.375	.375
14	Superfour-LSG	M	4-3¼x4½		50-3000	149.3	5.70		N	Se	L	Sil	1.56	1.56	1.37	1.37	.312	.312	.375	.375
15	Cruiser Six-HCS	M	6-3⅛x4½		90-3000	260.0	6.25		N	Se	L	Sil	1.68	1.68	1.50	1.50	.337	.337	.375	.375
16	Sea Lion Six-LHS	M	6-3⅛x4½		110-3400	260.0	6.25		N	Se	L	Sil	1.68	1.68	1.50	1.50	.337	.337	.375	.375
17	Explorer Six-OK	M	6-3⅛x4½		95-3200	230.0	7.50	186-1500 (EA)	N	In	L	2112N	1.64	1.40	1.50	1.25	.311	.311	.310	.310
18	Master Six-OL	M	6-3⅛x4¼		105-3200	237.0	7.50	192-1500 (EA)	N	In	L	2112N	1.64	1.40	1.50	1.25	.311	.311	.310	.310
19	Super Six-Commodore-Z	M	6-4x4½		145-3200	339.2	7.20	265-2000	N	In	L	Aus	1.83	1.67	1.72	1.50	.356	.356	.373	.373
20	Super Six-Stevedor-ZS	M	6-4x4½		130-2800	339.2			N	In	L	Aus	1.83	1.67	1.72	1.50	.356	.356	.373	.373
21	Waukesha (12) ICK	Ind	4-2½x3½	18-2600	16-2400	61.3	5.70	40-1700 (BE)	N	Se	L	Sil	1.12	.937	1.00	.812	.228	.250	.312	.312
22	(12) FC	T,Tr,Ind	4-3¼x4	35-2400	30-2200	133.0	5.58	96-1200 (BE)	N	In	L	Sil	1.34	1.34	1.18	1.18	.281	.281	.312	.312
23	(11) 180GL	T,Tr,Ind	4-3½x3⅝	45-2400	37-2000	144.0	6.75	118-1600 (BE)	W	In	I	Sil	1.31	1.13	1.18	1.00	.312	.281	.372	.372
24	(12) XAH	T,Tr,Ind	4-3⅝x4½	47-2000	44-2000	186.0	5.50	131-1400 (BE)	N	In	L	Sil	1.56	1.56	1.37	1.37	.302	.275	.375	.375
25	(11) 185GL	T,Tr,Ind	6-3½x3⅝	67-2400	59-2200	216.0	6.75	176-1400 (BE)	W	In	I	Sil	1.31	1.12	1.18	1.00	.312	.281	.372	.373
26	(11) 190GL	T,Tr,Ind	6-3⅝x4	77-2200	68-2000	265.0	6.50	223-1200 (BE)	W	In	I	Sil	1.40	1.28	1.25	1.12	.359	.375	.375	.375
27	(11) 195GL	T,Tr,Ind	6-4x4	85-2400	77-2200	302.0	6.20	240-1200 (BE)	D	In	I	Sil	1.84	1.59	1.69	1.44	.344	.344	.373	.372
28	(11) 195GKA	T,Tr	6-4⅛x4	122-3000	88-2200	320.0	6.20	243-1600 (BE)	N	In	I	Sil	1.84	1.59	1.69	1.44	.406	.411	.372	.372
29	(11) MZA	T,B,Ind,Tr	6-4⅛x4⅝	128-2800	82-2000	404.0	5.60	289-1000 (BE)	N	In	L	Sil	1.93	1.68	1.68	2.50	.375	.375	.375	.375
30	**(11) 135GKB	T,B,Tr	6-4½x5	147-2800	121-2200	426.0	6.25	337-1200 (BE)	D	In	I	Sil	2.06	1.81	1.87	1.62	.455	.423	.435	.433
31	**(11) 135GZB	T,B,Tr	6-4⅝x5	153-2800	130-2200	451.0	6.30	354-1200 (BE)	N	In		Sil	2.06	1.81	1.87	1.62	.452	.405	.434	.434
32	(11) 140-GK	T,B,Ind,Tr	6-4⅛x5½	160-2250	117-1800	525.0	6.40	401-1000 (BE)	W	In	L	Sil	2.12	1.56	1.87	1.37	.531	.434	.434	.434
33	**(11) 140GKB	T,B,Tr	6-4⅛x5½	177-2600	135-2000	525.0	6.40	425-1000 (BE)	W	In	I	Sil	2.12	1.56	1.87	1.37	.540	.540	.437	.437
34	(11) 140GZ	T,B,Tr	6-4⅛x5½	168-2250	135-1800	554.0	6.40	448-1100 (BE)	W	In		Sil	2.12	1.56	1.87	1.37	.524	.524	.437	.437
35	**(11) 140GZB	T,B,Tr	6-4⅛x5½	188-2600	143-2000	554.0	6.40	448-1100 (BE)	W	In	I	Sil	2.12	1.56	1.87	1.37	.524	.524	.437	.437
36	(11) 145-GK	T,B,Ind,Tr	6-5⅛x6	216-2000	167-1800	779.0	6.20	595-1000 (BE)	W	In	I	Sil	2.37	1.84	2.12	1.62	.594	.531	.500	.500
37	**(11) 145GKB	T,B,Tr	6-5⅛x6	240-2400	178-2000	779.0	6.20	595-1000 (BE)	W	In	I	Sil	2.56	2.03	2.31	1.81	.600	.600	.500	.500
38	**(11) 145GZB	T,B,Tr	6-5⅛x6	250-2400	185-2000	817.0	6.00	630-1100 (BE)	W	In	I	Sil	2.37	1.84	2.12	1.62	.594	.531	.497	.496
39	(12) WAK	T,Tr,Ind	6-6⅛x6½	222-1600	206-1500	1197.0	5.20	892- 900 (BE)	W	In	I	Sil	2.65	2.22	2.37	2.00	.656	.656	.500	.500
40	**(11) WAKB	T,Tr,Ind	6-6⅛x6½	280-1800	255-1800	1197.0	5.20	1000-1000 (BE)	W	In	I	Sil	2.65	2.22	2.37	2.00	.656	.656	.500	.500
41	*(12) NKRB	Ind	6-7x8½	316-1150	276-1050	1905.0	6.50	1520- 800 (BE)	W	In	I	Sil	3.22	2.78	2.87	2.50	.709	.709	.620	.619
42	^(12) LRORB	Ind	6-8⅛x8½	432-1100	405-1000	2894.0	6.60	2260- 800 (BE)	W	Se	I	Sil	3.50	3.00	3.25	2.75	.750	.640	.562	.562
43	^(12) LRZB	Ind	6-8⅛x8½	515-1200	482-1100	3520.0	6.10	2775- 600 (BE)	W	Se	I	Sil	4.19	3.41	3.62	3.12	.770	.698	.681	.681
44	VLROB	Ind	12-8½x8½	900-1200	867-1200	5788.0	6.75	4530- 800 (BE)	W	In	I	Sil								
45	Willys L4-134	C,Ind	4-3⅛x4⅝	60-4000		134.2	6.48	105-2000 (BE)	N	In	L	CHS	1.53	1.47	1.34	1.28	.351	.351	.373	.372
46	F4-134	C,T,Ind	4-3⅛x4⅝	72-4000		134.2	6.90	114-2000 (BE)	N	In	F	(o)	2.00	1.47	1.84	1.28	.260	.351	.374	.372
47	L6-226	C,T	6-3⅛x4⅝	115-3650		226.2	6.86	190-1800 (BE)	N	In	L	Sil	1.52	1.33	1.38	1.19	.352	.332	.341	.339
48	Wisconsin VE-4	Tr,Ind	4-3x3¼	22-2600	22-2600	91.9	5.44	50-1700 (EA)	N	Se	L	Aus	1.31	1.31	1.12	1.12	.275	.275	.309	.309
49	VF-4	Tr,Ind	4-3¼x3¼	25-2400	25-2400	107.7	5.07	57-1700 (EA)	N	Se	L	Aus	1.31	1.31	1.12	1.12	.275	.275	.309	.309
50	VP4D	Tr,Ind	4-3½x4	31-2200	31-2200	154.0	4.64	88-1400 (EA)	N	Se	L	St	1.56	1.56	1.37	1.37	.275	.275	.309	.309
51	VG4D	Ind	4-3½x4	36-2200	36-2200	154.0	5.06	94-1500 (EA)	N	Se	L	St	1.56	1.56	1.37	1.37	.275	.275	.309	.309
52	Witte 9B	Ind	1-6x5	12-1200	11.2-1200	98.2	5.60	52-1200 (BE)	W	In	I	Fec	2.13	2.13	1.68	1.88	.322	.322	.375	.375

ABBREVIATIONS

□—With hard seat inserts.
°—Stellite faced.
*—Weight complete with ignition and carburetor.
**—Intake, Moly Iron; exhaust, Stellite Steel.
+—With rotators.
■—Also available in reduction gear models.
•—Also available in R.H. rotation.
••—High output.
‡—Tocco hardened.
‡‡—Forked 23.7 oz.—Blade 22.4 oz.
†—Weight per pair.
‡—4 Rings used on Trucks and 5 on Coaches.
‡‡—5.20 for gasoline—6.00 for natural gas or butane.
‖—Dual.
‖‖—Cast Iron 315, Aluminum 250 lbs.
‡—Super-Charged engine.
‡‡—Weight of piston only.
^—Liquid petroleum gas engine.
♦—Intake, Steel; exhaust, Stellite Steel.
‡‡—Four barrel carburetor optional.
(2)—Two used.
(3)—Three used.
(4)—Four used.
(7)—Roller bearings.
(11)—Automotive power ratings.
(12)—Industrial power ratings.
(14)—Unilay Type 307 head, 3140 steel stem.
(a)—Main bearings.
(b)—Wristpins.
(c)—Connecting rods.
(d)—Camshaft.
(e)—Accessory drive.
(f)—Valve lifters or rocker arms and shafts.
(g)—Timing gears or chain.
(h)—Intake 30, Exhaust 45.
(i)—Cylinder walls.
(j)—Timken Cone 14138A, Cup 14276.
(k)—Intake 30, Exhaust 44.
(m)—A model in this series is also available for use with liquid petroleum gases. The engine will have a higher compression ratio, brake horsepower and torque.
(o)—Unilov 21-12 (Type 307) with valve rotators on 473.
(p)—Hydraulic valve lifters and cylinder walls.
(q)—Tocco hardened journals on VT-346 and VTX-346 models.
(r)—Reverse gear.
(s)—Fan drive gear.
(t)—Tappets and valve mechanism.
(u)—Complete with SAE housing.
(v)—Intake, 45; exhaust, 43.
(w)—Also available factory engineered for LPG fuel.
(x)—Sodium cooled.
(z)—Intake 30, Exhaust 29.
A—Alloy.
AC—Aluminum or cast iron.
AI—Alloy Iron.
Al—Aluminum alloy.
Ala—Aluminum alloy, anodized.
Alb—Aluminum bronze.
Alg—Algas.
Als—Aluminum alloy with steel strut.
Alst—Aluminum alloy with steel strut, tin plated.
Alt—Aluminum alloy (Tin coated).
AS—Alloy steel.
Ata—Aluminum alloy, tin plated and anodized.
Atn—Aluminum alloy, tinplated and knurled.
Aus—Austenitic steel.
B—Buses.
BB—Ball & Ball.
BE—Bare engine.
Ben—Bendix.
Bo—Used in both intake and exhaust seats.

For Directory of the Engine Manufacturers listed above, see page 286

GASOLINE ENGINES—*concluded*

VALVES				PISTONS				CONNECTING RODS			CRANKSHAFT							CARBURETOR			OVERALL DIMENSIONS (In.)				
Seats														MAIN BEARINGS											
Angle (Deg.)	Inserts Used?	Insert Material (S.A.E. No.)	Camshaft Drive—Type	Material	Weight with Pins, Rings, Bushings (Oz.)	Piston Pin—Diameter and Length (In.)	Number of Rings per Piston	Material	Center to Center Length (In.)	Weight with Bushing and Cap (Oz.)	Material	Counter Balance Used	Crank-Pin Diameter and Length (In.)	Number	Diameter and Length (In.) Front	Diameter and Length (In.) Rear	Oil Pressure Is—	Make	Size	Engines Weight without Carburetor or Ignition (Lb.)	Width	Height	Length	Clutch Housing (S.A.E. Nos.)	Line Number
45	N	.....	HG	Alt	9.7	.750x2.63	3	C1041	6⅝	19	C1046	Y	1.81x.875	4	3.06x1.03	3.06x1.50	acdg	Car	1¼	468	20½	27	29⅝	.....	1
45	N	.....	HG	Alt	17.8	.875x3.06	3	C1141	6⅝	23.7	C1046	Y	2.00x.813	5	2.50x1.00	2.50x1.52	acdf	Str	1½	705*	25¼	28¼	29⅝	.....	2
45	N	.....	HG	Alt	16.7	.875x3.06	3	C1141	6⅝	23.7	C1046	Y	2.00x.813	5	2.50x1.00	2.50x1.52	acdfg	Str	1½	710*	25¼	28¼	29⅝	.....	3
45	N	.....	HG	Alt	16.7	.875x3.06	3	C1141	6⅝	23.7	C1046	Y	2.00x.813	5	2.50x1.00	2.50x1.52	acdfg	Car	1½	710*	25¼	28¼	29⅝	.....	4
45	N	.....	HG	Al	15	.750x2.56	4	CS	7¼	26	CS	Y	1.75x1.37	2	1.75x1.87	1.75x2.00	acdg	Zen	7/8	300	20 7/16	22⅝	28⅛	.....	5
45	N	.....	HG	Al	.....	.688x2.16	3	CS	6	.....	CS	Y	1.56x1.23	2	1.99x1.62	1.99x1.25	acdgr	Zen	7/8	280	17¼	19	26¾	.....	6
45	N	.....	HG	Al	.....	.688x2.16	3	CS	6	.....	CS	Y	1.56x1.23	2	1.99x1.62	1.99x1.25	acdgr	Zen	7/8	348	17¼	19	35⅛	.....	7
45	N	.....	HG	CI	.....	1.00x3.75	3	Al	8½	.....	CS	Y	2.00x2.00	2	2.00x2.00	2.00x2.00	Splash	Zen	7/8	200	15 1/16	24⅝	17⅛	.....	8
45	N	.....	HG	CI	19	.625x2.44	3	CS	7½	22	CS	N	1.50x1.75	2	1.50x2.75	1.50x2.75	acdg	Zen	1	347	17 1/16	21 1/16	34⅛	.....	9
45	N	.....	HG	Al	15	.750x2.56	4	Al	7¼	18	CS	Y	1.75x1.37	3	1.75x2.37	1.75x2.37	acdgr	Zen	1¼	439	20⅛	22½	34⅛	.....	10
30	N	.....	HG	Al	29.5	.75x2.81	3	3140	6⅞	21.0	4140	.....	1.75x1.12	3	2.00x1.56	2.00x1.56	acdg	Zen	1¼	.....	24 1/16	21⅝	31⅛	.....	11
30	N	.....	HG	Al	29.5	.750x2.81	3	3140	6⅞	21.0	4140	.....	1.75x1.12	3	2.00x1.56	2.00x1.56	acdg	Zen	1¼	499	24 1/16	21⅝	40¾	.....	12
45	N	.....	HG	Al	15	.750x2.56	4	Al	7¼	18	CS	Y	1.75x1.37	4	1.75x2.50	1.75x2.00	acdg	Zen	1¼	529	24	20⅛	43⅞	.....	13
45	N	.....	HG	Al	20	.875x2.75	4	Al	8½	30	CS	N	2.00x1.75	3	2.00x2.50	2.00x2.50	acd	Zen	1¼	524	18½	25⅛	39⅝	.....	14
45	N	.....	HG	Al	28	.875x3.00	4	Al	8½	28	CS	N	2.00x1.75	7	2.00x3.00	2.00x1.75	acdg	Str	1½	765	20 1/16	26¼	49⅛	.....	15
45	N	.....	HG	Al	28	.875x3.00	4	Al	8½	28	CS	N	2.00x1.75	7	2.00x3.00	2.00x1.75	acdg	Str	1¾	810	22⅛	26¼	49⅛	.....	16
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	26	1046‡	N	2.00x1.25	7	2.50x1.31	2.50x1.93	acdgr	Zen	1½	684*	24⅛	23⅝	40⅝	.....	17
30	N	.....	HG	Alt	26	.875x2.92	3	1035	7	26	1046‡	Y	2.00x1.25	7	2.50x1.31	2.50x1.93	acgr	Zen	1½	698*	24⅛	23⅝	40⅝	.....	18
30	N	.....	HG	Alt	.....	1.12x3.44	4	1035	8	39.2	1046‡	Y	2.00x1.50	7	2.50x1.12	2.50x1.31	acr	Zen	1¾	840	25	25 1/16	45⅜	.....	19
30	N	.....	HG	Alt	.....	1.12x3.44	4	1035	8	39.2	1046‡	Y	2.00x1.50	7	2.50x2.12	2.50x1.31	acr	Zen	.....	840	25	25 1/16	45⅜	.....	20
45	N	.....	HG	Al	.....	.625x2.12	4	1045	6	14	1045	N	1.56x1.25	2g	ND1207	ND1207	ad	Op	5/8	195	14 1/16	20½	21 1/16	6	21
45	E	CA	HG	CI	.....	.875x2.75	4	1045	7¼	29	1045	N	1.75x1.06	3	2.12x1.18	2.12x1.43	abcdg	Op	¾	290	19	26⅜	27¾	5	22
44½	N	.....	HG	CI	.....	1.25x2.75	4	1045	6¾	31½	1045	N	2.00x1.38	3	2.25x1.63	2.25x1.63	acdg	Op	1	450	19	27⅜	30⅞	4	23
45	E	CA	HG	CI	.....	1.12x3.03	4	1045	8¾	46	1045	N	2.00x1.50	3	2.00x1.88	2.00x2.50	abcdg	Op	1	385	19	26⅜	32⅞	5	24
45	N	.....	HG	CI	.....	1.25x1.75	4	1045	6¾	.....	1045	N	2.00x1.38	4	2.25x1.63	2.25x1.63	abcdfg	Op	1	740	22	29	40¾	3	25
44½	N	.....	HG	CI	.....	1.25x3.00	4	1045	6¾	.....	1045	N	2.25x1.37	4	2.63x1.88	2.63x1.75	abcdfg	Op	1	690	22	29	42⅝	3	26
44½	E	CA	HG	CI	.....	1.25x3.43	4	1045	6¾	.....	1045	Y	2.62x1.38	4	2.63x1.88	2.63x1.75	abcdfg	Op	1¼	775	26	30⅛	43⅞	3	27
44½	E	CA	HG	CI	.....	1.25x3.44	4	1045	6¾	47¼	1045	Y	2.62x1.38	4	2.63x1.88	2.63x1.75	abcdfg	Op	1¾	775	26	30¼	43⅞	3	28
45	E	CA	HG	Al	.....	1.00x4.00	4	1045	8¾	46	1045	N	2.25x1.50	7	2.63x1.63	2.63x2.75	abcdg	Op	1¾	920	20½	34	43⅝	3	29
44½	E	St	HG	Al	.....	1.50x3.63	4	1045	9½	.....	1045	Y	3.00x1.62	7	3.25x1.90	3.25x2.50	abcdfg	Op	1¾	1325	26	37½	40 1/16	3	30
45	E	St	HG	Al	.....	1.50x3.62	4	1045	9½	.....	1045	Y	3.00x1.62	7	3.25x1.90	3.25x2.50	abcdfg	Op	1¾	1495	26	37½	48 1/16	3	31
(h)	E	CA	HG	Al	.....	1.37x3.87	4	1045	10¼	85	1045	N	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	32
(h)	E	St	HG	Al	.....	1.37x3.87	4	1045	10¼	85	C1046	Y	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1495	23⅝	41¾	50⅝	3	33
(h)	E	CA	HG	Al	.....	1.37x3.87	4	1045	10¼	85	1045	N	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	34
(h)	E	St	HG	Al	.....	1.37x3.87	4	1045	10¼	85	C1046	Y	2.62x2.00	7	3.25x1.59	3.25x3.00	abcdfg	Op	1¾	1390	23⅝	41¾	50⅝	3	35
(h)	E	CA	HG	Al	.....	1.62x4.87	4	1045	11⅛	133	1045	N	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25⅞	46⅜	57½	2	36
(h)	E	St	HG	Al	.....	1.62x4.87	4	1045	11⅛	133	C1046	Y	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25⅞	46⅜	57½	2	37
(h)	E	St	HG	Al	.....	1.62x4.50	4	1045	11⅛	133	1045	Y	3.00x2.25	7	3.50x2.00	3.50x3.50	abcdfg	Op	2	1810	25⅞	46⅜	57½	2	38
(h)	E	CA	HG	CI	.....	1.87x5.50	4	1045	13¼	195	1045	N	3.37x2.37	7	4.00x2.19	4.00x3.25	abcdfg	Op	2	3050	30⅝	50⅞	65⅝	0	39
(h)	E	St	HG	Al	.....	1.87x5.50	4	1045	13¼	195	1045	Y	3.37x2.37	7	4.00x2.19	4.00x3.25	abcdfg	Op	2	3050	30⅝	50⅞	65⅝	0	40
(h)	E	CA	HG	CI	.....	2.50x6.03	4	1045	15⅝	.....	1045	Y	4.37x2.75	7	5.25x3.44	5.25x5.56	abcdfg	Op	2½	5900	42	60 1/16	82½	00	41
30	E	CA	HG	CI	.....	2.25x7.75	5	1045	18⅝	474	1045	Y	4.00x3.75	7	4.25x4.81	4.25x5.50	abcdfg	Op	2½	9940	48½	65	95¼	00	42
(h)	E	CA	HG	CI	.....	3.00x8.25	5	1045	21⅝	.....	1045	Y	5.00x3.75	7	5.50x4.75	5.50x5.50	abcdfg	Op	4	11250	48½	72	98⅜	00	43
.....	Be	St	HG	Al	.....	3.00x7.00	5	4145	16	.....	1046	.....	5.75x3.06	7	6.25x4.75	6.25x4.75	abcdefg	.....	4	15000	67	75½	130	00	44
45	N	.....	HG	Alt	19	.812x2.78	3	1141	9 1/16	32.0	1040	Y	1.94x1.31	3	2.33x1.64	2.33x1.66	acdg	Car	1¼	344	19	26 5/16	26¼	5	45
45	N	.....	HG	Alt	19	.812x2.78	3	1141	9 1/16	32.0	1040	Y	1.94x1.31	3	2.33x1.64	2.33x1.66	acdfg	Car	1¼	390	19½	30¼	26	5	46
(h)	N	.....	Ch	Alt	20.9	.859x2.78	4	1035	7	29.6	1045	.....	2.06x1.53	4	2.38x1.06	2.38x1.32	acdg	Car	1 1/16	558^	25⅝	33	40⅛	.....	47
45	Bo	MI	HG	Al	19	.750x2.56	4	1035	8⅝	22	1045	N	1.75x1.12	2	Timken	Timken	PJ	Zen	7/8	295*	21½	25½	25⅝	.....	48
45	Bo	MI	HG	Al	20	.750x2.56	4	1035	8⅝	22	1045	N	1.75x1.12	2	Timken	Timken	PJ	Zen	7/8	295*	21½	25½	25⅝	.....	49
45	Bo	**	HG	Al	28	.937x2.75	4	1035	8⅝	29	1045	N	1.88x1.25	2	Timken	Timken	PJ	MaS	1	410*	24	25¾	28½	.....	50
45	Bo	**	HG	Al	28.0	.937x2.75	4	1035	8⅝	56	1045	Y	2.13x1.31	2	Timken	Timken	PJ	MaS	1	410*	24	25¾	28½	.....	51
45	Bo	St	Ch	Al	94.1	1.50x4.38	4	1035	10	102.5	1046	....	2.75x2.38	2	TRB	TRB	Splash	Til	1	655	31½	35 1/16	33 1/16	6	52

C—Cars.
CA—Cast alloy.
CAI—Cast alloy iron.
Car—Carter Carburetor Corp.
Cen—Century.
Ch—Chain.
CHS—Chrome nickel silicon steel.
CI—Cast iron.
CIA—Cast iron, anodized.
CMS—Carbon manganese steel.
CMT—Chromium tungsten steel.
CNS—Chrome nickel steel.
CS—Carbon steel.
C-Z—Carter or Zenith.
D—Dry liners.
DC—Durachrome castings.
DFS—Drop forged steel.
Duc—Durachrome.
Dur—Duraluminum
E—Used on exhaust valve seats.
EA—Engine with standard accessories.
Eat—Eatonite.
EFS—Electric furnace steel.
Ens—Ensign.
F—F-head.
Fec—Ferchrome.
H—Horisontal motor.
HAS—High alloy steel.
HC—Helical gear and chain.
HFA—Hard facing alloy.
HG—Helical gear.
HI—Hard iron.
Hol—Holley Carburetor Co.
I—In head (Valves).
In—Integral.
Ind—Industrial.
Jad—Jadson.
L—Valves at side (L-Head).
M—Marine.
MA—Manganese alloy.
MaS—Marvel-Schebler Carburetor Div.
M-C—Marvel-Schebler or Carter.
MCS—Molybdenum chrome steel.
MI—Moly Iron.
MS—Manganese steel.
M-Z—Marvel-Schebler or Zenith.
N—No or none.
NI—Nodular iron.
Nic—Nickel chrome.
Nif—Nifferrite.
Nir—Ni-Resist.
NS—Nickel steel.
Op—Optional.
PJ—Pump jet.
R-P—Rochester Products.
SA—Special alloy.
SAC—Super alloy casting.
SB—Spiral bevel gear.
Se—Separate.
SF—Steel forging.
SG—Spur gear.
Sil—Silichrome steel.
Spec—Special.
SS—Semi-steel.
St—Stellite steel.
Ste—Steel.
Str—Stromberg-Elmira Div.
T-12—Thompson Products No. 12.
T—Trucks.
TA—Tungsten alloy.
TCA—Tungsten cobalt alloy.
Th—Valve opposite (T-head).
Til—Tillotson Mfg. Co.
TP—Thompson Products.
Tr—Tractors.
TRB—Tapered roller bearings.
Tun—Tungsten steel.
W—Wet liners.
WM—Wausau Cast Moly No. 1.
Y—Yes.
Zen—Zenith Carburetor Div.

For Directory of the Engine Manufacturers listed above, see page 286

DIESEL ENGINES 1956

TRUCKS • BUSES • TRACTORS

Line Number	ENGINE MAKE AND MODEL	Built Under License from	Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	GENERAL: With Bare Engine — Maximum Brake Hp. at Specified R.P.M.	GENERAL: With Standard Accessories — Max. Intermittent Hp. at Specified R.P.M.	GENERAL: With Standard Accessories — Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	VALVES: Arrangement	VALVES: Intake Port Diameter and Lift (In.)
1	Allis-Chalmers 2BD-77	Lanova	M,I	Ach	2-4 1/4x4 1/2	W	4	77	17-2000	15.8-2000	13-1800	15.30	725	74	48.14	49-1400	600	820	VI	1 1/16 - .429
2	4BD-182	Lanova	Tr,I	Ach	4-4 1/4x4 1/2	N	4	182	46.5-2400	40-2400	31-1800	15.00	725	75		122-1400			VI	1 1/16 - .429
3	6-DT-317	Lanova	T,Tr,I	Ach	6-3 5/8x5 1/2	D	4	317	90-2300	75-2300	56-1800	14.50	725	78	20.3	224-1500	1133		VI	1 1/16 - .426
4	6-DTM-317	Lanova	M	Ach	6-3 5/8x5 1/2	D	4	317	90-2300	75-2100	56-1800	14.50	725	78	22.3	224-1500		1250	VI	1 1/16 - .486
5	6-DT-468	Lanova	T,Tr,I	Ach	6-4 1/4x5 1/2	D	4	468	113-2000	97-2000	80-1800	14.20	725	79	19.1	288.5-1100	1435		VI	1.59 - .486
6	6-DTM-468	Lanova	M	Ach	6-4 1/4x5 1/2	D	4	468	113-2000	97-1800	75-1800	14.20	725	75	23.7	308-1100		1775	VI	1.59 - .476
7	8DA-779	Lanova	T,Tr	Ach	8-5 1/4x6	W	4	779	185-2100	167-2000	148-1800	14.20	725	80.5		540-1400			VI	2 - .540
8	8DA-814	Lanova	T,Tr,I	Ach	8-5 1/4x6 1/2	W	4	844	215-2100	194-2000	166-1800	14.2	725	88.5	17.2	640-1500	2850		VI	2.00 - .580
9	8DC-1879	Lanova	R,I	Ach	8-6 3/4x8	W	4	1879	248-1100	222-1100	171- 900	13.00	725	80	40.6	1330- 650	8950		VI	2.50 - .687
10	8DCM-1879	Lanova	M	Ach	8-6 3/4x8	W	4	1879	248-1100	222-1100	186-1000	13.00	725	78	34.9	1330- 650		6500	VI	2.50 - .687
11	8DAM-844	Lanova	M	Ach	8-5 1/4x6 1/2	W	4	844	215-2100	194-2000	166-1800	14.2	725	88.5	23.5	640-1500		3900	VI	2.00 - .540
12	8DAS-844	Lanova	T,B,Tr,I	Ach	8-5 1/4x6 1/2	W	4	844	280-2100	246-2000	180-1600	12.8	725	106		780-1500			VI	2.00 - .540
13	6DASM-844	Lanova	M	Ach	6-5 1/4x6 1/2	W	4	844	280-2100	246-2000	180-1600	12.8	725	106		780-1500			VI	2.00 - .540
14	8DA-1125	Lanova	T,R,I	Ach	8-5 1/4x6 1/2	W	4	1125	288-2100	236-2000	187-1600	14.2	725	82.5		830-1300			VI	2.00 - .540
15	8DAM-1125	Lanova	M	Ach	8-5 1/4x6 1/2	W	4	1125	288-2100	236-2000	187-1600	14.2	725	82.5		830-1300			VI	2.00 - .540
16	8DAS-1125	Lanova	T,Tr,I	Ach	8-5 1/4x6 1/2	W	4	1125	350-2100	312-2000	220-1600	12.8	725	97		1040-1400			VI	2.00 - .540
17	8DASM-1125	Lanova	M	Ach	8-5 1/4x6 1/2	W	4	1125	350-2100	312-2000	220-1600	12.8	725	97		1040-1400			VI	2.00 - .540
18	*6DCS-1879	Lanova	I	Ach	6-6 3/4x8	W	4	1879	330-1200	292-1200	212- 900		725	99		1580- 700			VI	2.50 - .687
19	*6DCSMR-1879	Lanova	M	Ach	6-6 3/4x8	W	4	1879	330-1200	292-1200	212- 900		725	99		1580- 700			VI	2.50 - .687
20	8DC-2505	Lanova	I	PC	8-6 3/4x8	W	4	2505	388-1300	347-1300	264-1000	13.00	825	83.5	37.1	1810- 700	9800		VI	2.50 - .687
21	*8DCS-2505	Lanova	I	PC	8-6 3/4x8	W	4	2505	516-1300	456-1300	348-1000	13.00	875	110	31.0	2390- 800	10500		VI	2.50 - .687
22	6DA-273		T	DI	6-3 5/8x4 1/2	N	4	273	85-2800	75-2800	53-1800	14.20	825	85.5	15.7	204-1400	830		VI	1.53 - .439
23	2BDMR-77	Lanova	M	Ach	2-4 1/4x4 1/2	W	4	77	17-2000	17-2000	16-2000	15.30	725	88.3	51.3	49-1400		820	VI	1.38 - .429
24	4BDMR-153	Lanova	M	Ach	4-3 1/4x4 1/2	W	4	153	40-2400	40-2400	32-2000	15.30	725	82.8	31.3	104-1400		1000	VI	1.38 - .429
25	6BDMR-230	Lanova	M	Ach	6-3 1/4x4 1/2	W	4	230	60-2400	60-2400	48-2000	15.30	725	82.6	25.0	156-1400		1200	VI	1.38 - .429
26	6DAMR-273		M	DI	6-3 5/8x4 1/2	N	4	273	85-2800	85-2800	60-2000	14.20	825	87		204-1400			VI	1.53 - .439
27	6DTMR-317	Lanova	M	Ach	6-3 5/8x5 1/2	D	4	317	90-2300	90-2300	72-2000	14.50	725	89.9		224-1500			VI	1.38 - .426
28	6DTMR-468	Lanova	M	Ach	6-4 1/4x5 1/2	D	4	468	114-2000	100-2000	80-1800	14.20	725	75.2		268.5-1100			VI	1.59 - .486
29	6DAMR-779	Lanova	M	Ach	6-5 1/4x6	W	4	779	185-2100	167-2100	148-1800	14.20	725	83.6		540-1400			VI	2.00 - .540
30	6DAMR-844	Lanova	M	Ach	6-5 1/4x6 1/2	W	4	844	215-2000	184-2000	165-1800	14.20	725	86		640-1500			VI	2.00 - .580
31	6DASMR-844	Lanova	M	Ach	6-5 1/4x6 1/2	W	4	844	275-2000	247-2000	196-1800	12.80	725	102.1		780-1500			VI	2.00 - .540
32	8DAMR-1125	Lanova	M	Ach	8-5 1/4x6 1/2	W	4	1125	285-2000	245-2000	206-1800	14.20	725	80.6		830-1300			VI	2.00 - .540
33	8DASMR-1125	Lanova	M	Ach	8-5 1/4x6 1/2	W	4	1125	340-2000	302-2000	240-1800	12.80	725	92.9		1040-1400			VI	2.00 - .540
34	8DATMR-1125	Lanova	M	TC	8-5 1/4x6 1/2	W	4	1125		300-1900	255-1600	12.80		112					VI	2.00 - .540
35	6DCMR-1879	Lanova	M	Ach	6-6 3/4x8	W	4	1879	262-1300	236-1300	186-1000	13.00	725	78.4		1330-650			VI	2.50 - .687
36	6DCSMR-1879	Lanova	M	Ach	6-6 3/4x8	W	4	1879	340-1300	302-1300	232-1000		725	97.6		1580-700			VI	2.50 - .687
37	8DCMR-2505	Lanova	M	PC	8-6 3/4x8	W	4	2505	388-1300	347-1300	296-1200	13.00	825	76	41.7	1810-700		12350	VI	2.50 - .687
38	8DCSMR-2505	Lanova	M	PC	8-6 3/4x8	W	4	2505	516-1300	456-1300	400-1200	13.00	875	105.4	32.5	2390-800		13000	VI	2.50 - .687
39	6DAT-779	Lanova	T,Tr,I	TC	6-5 1/4x6	W	4	779	275-2100			12.50							VI	2.00 - .540
40	4DA153	Lanova	Tr,I	Ach	4-3 1/4x4 1/2	W	4	153	36.5-2000	33.5-2000	30-2000	15.00	725	77	23.7	111-1250	710		VI	1.38 - .329
41	4DAMR182	Lanova	M	Ach	4-3 1/4x4 1/2	N	4	182		50-2400	40-2000	15.00	750	87	23.3	127-1700		930	VI	1.47 - .421
42	6DA230	Lanova	Tr,I	Ach	6-3 1/4x4 1/2	W	4	230	55-2000	50-2000	45-2000	15.00	725	77	18.7	166-1250	840		VI	1.38 - .329
43	8DA970		I	PC	6-5 1/4x6 1/2	W	4	970	240-2000	215-1900	178-1600	14.00	725	90.8	23.6	752-1200	4200		VI	2.25 - .546
44	Atlas 45		I,M	DI	4-9x10 1/2	W	4	2672			192-750	14.00	850	76	68.0&		13000	15100	HI	3.25 - .875
45	45		I,M	DI	5-9x10 1/2	W	4	3340			242-750	14.00	850	76	58.0&		14000	16100	HI	3.25 - .875
46	45		I,M	DI	6-9x10 1/2	W	4	4008			290-750	14.00	850	76	59.0&		17100	20000	HI	3.25 - .875
47	*45		I,M	DI	6-9x10 1/2	W	4	4008			435-750	13.00	900	115	42.5&		18500	20800	HI	3.25 - .875
48	45		I,M	DI	8-9x10 1/2	W	4	5344			385-750	14.00	850	76	56.1&		21600	24500	HI	3.25 - .875
49	*45		I,M	DI	8-9x10 1/2	W	4	5344			580-750	13.00	900	115	39.3&		22800	25600	HI	3.25 - .875
50	35-S-4	Own	I,M	DI	4-6 1/4x8 1/4	W	4	1099			300-1225	14.60		78	20.0&		6000	10900	VI	2.44 -
51	35-S-6	Own	I,M,R	DI	6-6 1/4x8 1/4	W	4	1643			300-1225	14.60		78	25.0&		8500	10900	VI	2.44 -
52	35-SX-6	Own	I,M,R	DI	6-6 1/4x8 1/4	W	4	1643			300-1225	13.15		120	30.0&		9000	10900	VI	2.44 -
53	Caterpillar D-311	Own	Tr,M,I	PC	4-4x5	W	4	252	57-2000	52-2000	40-1800	18.50		70	47.2&	164-1300	1680	2410	VI	1 1/16 - .421
54	D-318	Own	Tr,M,I	PC	4-4 1/2x5 1/2	W	4	350	82-2000	71-2000	54-1800	18.0		68	42.2&	228-1000	2280	2870	VI	2 1/16 - .434
55	D-319	Own	Tr,M,I	PC	4-4 1/2x5 1/2	W	4	525	119-2000	107-2000	81-1800	18.0		68	36.7&	344-1200	2970	3615	VI	2 1/16 - .434
56	D-397	Own	M,I,R	PC	12-5 1/4x8	W	4	2493	520-1300	493-1300	450-1200	16.00		114.4	26.8&	2420-900	11620	14425	VI	2 1/16 - .5885
57	D-398	Own	M,I,R	PC	12-5 1/4x8	W	4	2493	415-1300	388-1300	360-1200	16.00		90.6	32.4&	1865-850	11100	14010	VI	2 1/16 - .5885
58	D-375	Own	M,I,R	PC	8-5 1/4x8	W	4	1662	350-1300	328-1300	302-1200	16.00		112	31.2&	1630-830	8870	11450	VI	2 1/16 - .5885
59	D-364	Own	M,I,R	PC	8-5 1/4x8	W	4	1662	275-1300	253-1300	238-1200	16.00		87	38.4&	1230-900	9450	11270	VI	2 1/16 - .5885
60	D326F	Own	Tr,M,I	PC	6-5 1/4x6 1/2	W	4	805	184-2000	176.5-2000	131.5-1800	17.25		72	27.0&	585-1000	3550	4470	VI	2.13 - .510
61	D337F	Own	Tr,M,I	PC	6-5 1/4x6 1/2	W	4	805	280-2000	265-2000	180.5-1800	17.25		99	20.5&	800-1600	3700	4830	VI	2.13 - .510
62	D339	Own	Tr,I	PC	4-5 1/2x8	W	4	831	125-1200	119-1200	93-1200	15.70		74	40.9	600-800	3800		VI	2.06 - .468
63	D342	Own	Tr,M,I	PC	6-5 1/2x8	W	4	1246	190-1200	184.5-1200	146.5-1200	15.70		77.5	35.1&	905-820	5140	6905	VI	2.06 - .468
64	Continental GD-157	Own	I,M	TC	4-3 5/8x4 5/8	W	4	157	39-2000			15.5				113-1200	605		VI	1.18 - .375
65	HD-243	Own	I	TC	4-3 5/8x5 1/2	W	4	243	54.7-2000			15				178-1200	840		VI	1.37 - .325
66	HD-260	Own	I	TC	4-3 7/8x5 1/2	W	4	260	59.3-2000			15				188-1100	840		VI	1.37 - .325
67	TD-427	Own	I	TC	6-4 1/4x4 7/8	N	4	427	106.5-2000			14.5				310-1300	1300		VI	1.71 - .437
68	RD-572	Own	I,M	TC	6-4 5/8x5 5/8	D	4	572	154-2000			14.5				414-1300	1845		VI	1.87 - .546
69	TD-6427	Own	T,B,Tr	TC	6-4 1/4x4 7/8	N	4	427	116-2400			14.5				307-1300	1270		VI	1.71 - .437
70	RD-6572	Own	T,B,Tr	TC	6-4 5/8x5 5/8	D	4	572	172-2400			14.5				423-1300	1785		VI	1.87 - .546
71	SD-802	Own	I	TC	6-5 1/4x5 1/2	D	4	802	202-1800			14.7				620-1200			VI	2.19 - .552
72	SD-6802	Own	T,B	TC	6-5 1/4x5 1/2	D	4	802	225-2200			14.7				620-1300			VI	2.19 - .552
73	ED-201	Own	I	TC	4-3 5/8x4 7/8	W	4	201	45.5-2000			15				145-1100			VI	1.44 - .350
74	JD-382	Own	I	TC	4-4 1/2x6	W	4	382	72.5-1600			14.5				276-1000			VI	1.56 - .406
75	VD-603	Own	I	TC	8-4 5/8x4 1/2	N		602	175-2600			15.80				468-1200			VI	1.94 - .567
76	VD-8603	Own	T,B	TC	8-4 5/8x4 1/2	N	4	603	182-2800			15.80					1696		VI	1.94 - .567
77	ZD-129	Own	I	TC	4-3 1/2x3 7/8	W		129	34-2000			16.25				87-1200			VI	1.13 - .352
78	HD-277	Own	I	TC	4-4x5 1/2	W		277	63-2000			15.30				201-1100			VI	1.38 - .325
79	Cummins J-6	Own	T,B,Tr,M,I	DI	6-4 1/2x5	W	4	401	95-1800	80-1800	71-1800	15.70		78	20.4	288-1450	1450	1830	VI	1.38 - .500
80	JF-6	Own	T,B,Tr,M,I	DI	6-4 1/2x5	W	4	401	105-2200	89-2200	76-1800	15.70		83	19.1	288-1450	1450	1880	VI	1.38 - .500
81	JN-6	Own	T,B,Tr,M,I	DI	6-4 1/2x5	W	4	401	125-2500	96-2200	87-2200	15.80		78	16.7	290-1800	1450	1900	VI	1.16 -
82	JS-600	Own	T,B,Tr,M,I	DI	6-4 1/2x5	W	4	401	150-2500	118-2200	105-2200	15.50		94	14.7	352-1650	1545	1990	VI	1.38 - .500
83	JNS-6	Own	T,B,Tr,M,I	DI	6-4 1/2x5	W	4	401	165-2500	132-2200	115-2200	15.50		103	13.5	394-1650	1545	1990	VI	1.16 -

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

MARINE • RAILCAR • INDUSTRIAL ★ ★ ★ ★

VALVES		PISTON					PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM					AIR CLEANER—MAKE	FUEL FILTER—MAKE	STARTING METHOD		OVERALL DIMENSIONS			CLUTCH HOUSING (S. A. E. Numbers)	LINE NUMBER
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked in—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)				Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)		
1.12– .429	AA	4.12	2.36	3	2	1.00–2.75	F	1035	7⅜	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	Com	AL	E-H	22⅛	19¾	29⅛(11)	3,2	1
1.12– .429	AA	4.46	2.69	3	2	1.00–3.10	F	1035	7⅜	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	Com	AL	Ele	30⅛	19¾	28⅛(12)	3,2	2
1.12– .429	AA	4.46	2.69	3	2	1.00–3.10	F	1035	7⅜	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	B-P	DR	Ele	42½		27	35½(12)	3,2	3
1.18– .486	AA	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000		B-P	DR	Ele	54⅛(11)	27½	34⅛(12)	2,3	4
1.18– .486	AA	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DR	Ele	48½	25¾	37⅛(12)	2,1	5
1.37– .476	AA	5.25	4.48	3	2	1.50–3.56	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000		B-P	DR	Ele	61½(11)	29⅝	36⅛(12)	2,1	6
1.37– .476	AA	5.25	4.48	3	2	1.50–3.56	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000	Uni	Com	L-D	Ele	58⅛	29⅞	48¼	1,0	7
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000	Uni	AB	L-D	E-G	58⅛	29⅞	48¼	1,0	8
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1010	12.50	10.62	7	3.89	AB	AB	C	Pi	2000	Uni	P-S	D-N	E-G	86½	38½	62¼(12)	00,0	9
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800	Uni	P-S	D-N	E-G	114⅛(11)	37⅞	62⅞(12)	00,0	10
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800		P-S	D-N	E-G	114⅛(11)	37⅞	62⅞(12)	00,0	10
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	83⅛	30¼	46⅞	1,0	11
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	58⅛	32½	48¼	1,0	12
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	89⅞	36½	45½	1,0	13
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	73	30¼	48¼	1,0	14
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	101¼	36½	46⅞	1,0	15
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	83⅛	36½	53⅝	1,0	16
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	101¼	36½	46⅞	1,0	17
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	101¼	36½	46⅞	1,0	17
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	88½	36½	53⅝	1,0	16
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800		Pur	LB	E-G	88½	48	63⅝	00,0	18
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800		Pur	LB	E-G	126⅜	48	72⅝	00,0	19
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	108¼	47½	74½	00,00	20
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	21
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	22
1.22– .439	AA	4.13	2.75	3	2	1.00–2.75	F	1040	7.38	3.00	7	2.50	AB	AB	C	Pi	2000	Uni	Cb	DR	Ele	39⅞	22¾	25⅝(4)		23
1.12– .429	AA	4.12	2.36	3	2	1.00–2.75	F	1035	7.38	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	Com	AL	E-H	22⅛	19¾		3,2	24
1.12– .429	AA	4.12	2.36	3	2	1.00–2.84	F	1035	7.38	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	Com	AL	Ele	30⅛	19¾	28⅛(12)	3,2	24
1.12– .429	AA	4.12	2.36	3	2	1.00–2.84	F	1035	7.38	2.62	3	2.50	AB	AB	C	Pi	2000	Uni	Com	AL	Ele	30⅛	19¾	28⅛(12)	3,2	25
1.12– .429	AA	4.12	2.36	3	2	1.00–2.84	F	1035	7.38	2.62	7	2.50	AB	AB	C	Pi	2000	Uni	Cb	DR	Ele	39⅞	22¾	25⅝(4)		26
1.22– .474	AA	4.13	2.75	3	2	1.00–2.75	F	1010	7.38	3.00	7	2.50	AB	AB	C	Pi	2000	Uni	B-P	DR	Ele	42½	27	35½(12)	3,2	27
1.18– .486	AA	4.93	3.00	3	2	1.25–2.92	F	1035	9.50	3.41	7	3.00	AB	AB	C	Pi	2000	Uni	B-P	DR	Ele	48½	25¾	37⅞(12)	2,1	28
1.37– .476	AA	5.25	4.48	3	2	1.50–3.56	F	6140	11.00	4.87	7	3.00	AB	AB	C	Pi	2000	Uni	Com	L-D	Ele	58⅛	29⅞	48¼	1,0	29
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000	Uni	AB	L-D	E-G	58⅛	29⅞	48¼	1,0	30
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	58⅛	32½	48¼	1,0	31
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	73	30¼	48¼	1,0	32
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	83⅛	32½	53⅝	1,0	33
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	101¼	36½			34
1.81– .540	AA	6.75	6.70	3	2	1.25–4.50	F	1010	12.50	10.62	9	3.89	AB	AB	C	Pi	2000		AB	L-D	E-G	83⅛	32½	62⅛(12)	00,0	35
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800	Uni	P-S	D-N	E-G	86⅛	38½	62⅛(12)	00,0	35
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800		Pur	LB	E-G	88½	48	63⅝	00,0	36
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	7	4.50	AB	AB	C	Pi	1800		Pur	LN	AEG	108¼	47½	74½	00,0	37
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	38
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	38
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	38
2.16– .687	AA	9.31	19.19	3	2	2.75–5.53	F	1035	17.75	28.51	9	4.69	AB	AB	C	Pi	1800	Don	Pur	LN	AEG	112⅝	47½	74½	00,0	38
1.81– .540	AA	6.75	6.70	3	2	1.75–4.50	F	1045	12.50	10.62	7	3.89	AB	AB	C	Pi	2000		AB	L-D	Ele	58⅛	29⅞			39
1.12– .334	AA	4.12	2.36	3	2	1.00–2.84	F	1035	7.38	2.62	4	2.50	AB	AB	C	Pi	2000	Uni	BFC	AL	Ele	30⅛	20½	29⅞		40
1.12– .419	AA	4.46	2.69	3	2	1.00–3.10	F	1035	7.38	2.62	3	2.50	AB	AB	C	Pi	2000	Own	B-N	AL	Ele	48⅛	30	35¼		41
1.12– .334	AA	4.12	2.36	3	2	1.00–2.84	F	1035	7.38	2.62	7	2.50	AB	AB	C	Pi	2000	Uni	BFC	AL	Ele	38⅞	20½	29⅞(12)		42
1.88– .546	AA	6.75	6.70	3	2	1.75–4.50	F	1040	12.50	10.62	7	3.75	AB	AB	C	Pi	2000	Don	C-F	DR	Ele	59⅛	39⅞	64½		43
3.25– .875	CI	13.00	93.0	4	2	3.25–7.62	F	4140	22.25	85.0	5	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	98	56¾	79¾		44
3.25– .875	CI	13.00	93.0	4	2	3.25–7.62	F	4140	22.25	85.0	6	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	112	56¾	79¾		45
3.25– .875	CI	13.00	93.0	4	2	3.25–7.62	F	4140	22.25	85.0	7	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	125	56¾	79¾		46
3.25– .875	CI	13.00	93.0	4	2	3.25–7.62	F	4140	22.25	85.0	7	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	140	56¾	90		47
3.25– .875	CI	13.25	95.0	4	2	3.25–7.62	F	4140	22.25	85.0	7	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	155	56¾	79¾		48
3.25– .875	CI	13.00	93.0	4	2	3.25–7.62	F	4140	22.25	85.0	9	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	169	56¾	90		49
3.25– .875	CI	13.25	95.0	4	2	3.25–7.62	F	4140	22.25	85.0	9	6.25	Sc	Sc	C	Mu	3500	Opt	WP	Own	A	169	56¾	90		49
2.19–	AA			4	2						5	5.75	BS					AM	Win	Own	A-EI	66⅞	35	68½		50
2.19–	AA			4	2						7	5.75	BS					AM	Win	Own	A-EI	87⅛	35	68½		51
2.19–	AA			4	2						7	5.75	BS					AM	Win	Own	A-EI	87⅛	35	68½		52
2.19–	AA			4	2																						
1⅛– .423	AA	5.53		3	2	1.62–3.23	F	1040	10.25		5	2.75	Own	Own	C	Si	750	Don	Com	Own	E-G	56⅞	27½	50½	2½	53
1⅛– .434	AA	6.16		3	2	1.81–3.73	F	1040	10.25		5	3.50	Own	Own	C	Si	750	Don	Com	Own	E-G	59⅛	29	49½	1⅝	54
1⅛– .434	AA	6.16		3	2	1.81–3.73	F	1040	10.25		7	3.50	Own	Own	C	Si	750	Don	Com	Own	E-G	76⅛	31⅞	56⅞	1⅝	55
1⅛– .434	AA	6.16		3	2	1.81–3.73	F	1040	10.25		7	3.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	107½	54⅜	79½	00	56
2⅜– .5885	AA	8.19		3	1	2.39–4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	103⅞	54⅜	79½	00	57
2⅜– .5885	AA	8.19		3	1	2.39–4.73	F	1040	18.00		7	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	82½	54⅜	79½	00	58
2⅜– .5885	AA	8.19		3	1	2.39–4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Com	O-D	AEG	83⅝	54⅜	76½	00	59
2⅜– .5885	AA	8.19		3	1	2.39–4.73	F	1040	18.00		5	5.50	Own	Own	C	Si	750	Don	Pur	Own	AEG	71⅜	36¾	58¼		60
1.94– .510	AA	6.38		3	2	1.75–4.35	F	1040	10.75		7	4.25	Own	Own	C	Si	750	Don	Pur	Own	AEG	72⅝	36¾	59½		61
1.94– .510	AA	6.38		3	2	1.75–4.35	F	1040	10.75		7	4.25	Own	Own	C	Si	750	Don	Pur	Own	AEG	81	42½	62		63
2.06– .468	AA	8.19		3	1	2.38–4.73	F	1040	15.00		5	3.75	Own	Own	C	Si	1750	Don	Pur	Own	AEG	61	39	66½		62
2.06– .468	AA	8.19		3	1	2.38–4.73	F	1040	15.00		7	3.75	Own	Own	C	Si	1750	Don	Pur	Own	AEG	81	42½	62		63
1.06– .375	AA	3.75		3	1	1.12–	F	1035	7.00		3	2.37	BR	AB		Pi	1850	Opt	Opt		Ele	31⅝	19⅞	30¼		64
1.25– .328	AA	4.31		3	2	1.25–	F	1035	9.50		3	2.87	BR	AB		Pi	1850	Opt	Opt		Ele	33⅝	21⅛	35		65
1.25– .328	AA	4.31		3	2	1.25–	F	1035	9.50		3	2.87	BR	AB		Pi	1850	Opt	Opt		Ele	33⅝	21⅛	35		66
1.25– .328	AA	4.31		3	2	1.25–	F	1035	9.50		7	2.87	AB	AB		Pi	1850	Opt	Opt		Ele	47⅞	27½	37⅛	Opt	67
1.50– .437	AA	4.68		3	2	1.43–	F	1035	8.37		7	2.87	AB	AB		Pi	1850	Opt	Opt		Ele	51⅛	31⅝	44½	Opt	68
1.65– .546	AA	5.93		3	2	1.50–	F	1035	10.50		7	2.87	AB	AB		Pi	1850	Opt	Opt		Ele	41½	25⅛	34½	Opt	69
1.50– .437	AA	4.68		3	2	1.25–	F	1035	8.37		7	3.25	AB	AB		Pi	1850	Opt	Opt		Ele	51⅛	27½	37⅛	Opt	70
1.65– .546	AA	5.93		3	2	1.50–	F	1035	10.50		7	3.25	AB	AB		Pi	1850	Opt	Opt		Ele	53½	30⅜	48½		71
1.91– .552	Alu	5.88		3	2	1.75–4.22	F	8640	10.50		7	3.75	AB	AB		Pi	1850	Opt	Opt		Ele	53½	30⅜	48½	Opt	72
1.91– .522	Alu	5.88		3	2	1.75–4.22	F	8640	10.50		3	2.62	AB	AB		Pi	1850	Opt	FB	AL	Ele					73
1.19– .350	Alu	4.06		3	1	1.10–3.06	F	1035	8.38		3	3.25	AB	AB		Pi	1850	AM	FB	AL	Ele					74
1.38– .408	Alu	5.94		3	2	1.49–3.71	F	1035	10.00								1900		ZFB	DR	Ele					75
1.63– .567	Alu	5.44	6.19	3	2	1.50–3.97	F	8637	8.38	4.68	5	3.50	RM			Pi	1900		ZFB	DR	Ele	43½	34	46½		76
1.63– .567	Alu	5.44	6.19	3	2	1.50–3.97	F	8637	8.38	4.68	5	3.50	RM			Pi	1900		ZFB	DR	Ele	43½	34	46½		77
1.00– .382	AA	3.56		3	1	.998–2.68	F	1035	6.38	1.75	3	2.50	RM	AB		Pi	1850	Opt	Opt	Opt	Ele	27	19¾	32¼		78
1.25– .325	Alu	4.31		3	2	1.25–	F	1035	9.50		3	3.06	BR	AB		Pi	1850	Opt	Opt	Opt	Ele	33⅛	21	33½		79
1.38– .500	Alu	4.75		3	1	1.50–3.37	F		9.50	6.50	7	3.88	Own	N		Mu		Pur	Fra		Ele	46⅛	25⅝	41¼	2,3	80
1.38– .500	Alu	4.75		3	1	1.50–3.37	F		9.50	6.50	7	3.88	Own	N		Mu		Pur	Fra	Fra	Ele	46⅛	26⅛	41¼	2,3	81
1.16–	Alu	4.94		3	1	1.50–3.37	F		9.50	6.50	7	3.88	Own	N		Mu		Fra	Fra		Ele	46⅛	24½	40⅛	2,3	82
1.38– .500	Alu	4.75		3	1	1.50–3.37	F		9.50	6.50	7	3.88	Own	N		Mu		Fra	Fra		Ele	46⅛	24½	40⅛	2,3	83
1.16–	Alu	4.94		3	1	1.50–3.37	F		9.50	6.50																

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

1956 AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL: Designed for	Type	Number of Cylinders Bore and Stroke (in.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	VALVES: Arrangement	VALVES: Intake Port Diameter and Lift (In.)
1	Cummins—Continued																			
2	JT-6	Own	T,B,Tr,M,I	DI	6-4½x5	W	4	401	175-2500	135-2200	122-2200	15.50	....	109	13.2	407-1700	1615	2050	VI	1.16-....
3	HRC-400	Own	T,B,Tr,M,R,I	DI	4-5½x6	W	4	495	110-1800	93-1800	83-1800	15.50	....	73	19.9	358-1100	1650	1745	VI	1.75-.500
4	NHC-400	Own	T,B,Tr,M,R,I	DI	4-5½x6	W	4	495	120-1800	104-1800	90-1800	15.50	....	80	19.4	390-1100	1750	1810	VI	1.56-.422
5	H-600	Own	T,B,Tr,M,R,I	DI	6-4½x6	W	4	672	150-1800	128-1800	113-1800	17.00	....	73	21.2	480-1200	2400	2490	VI	1.75-.500
6	HR-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	165-1800	140-1800	124-1800	15.80	....	73	19.3	518-1300	2400	2490	VI	1.75-.500
7	HRF-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	180-2000	153-2000	129-1800	15.50	....	75	19.0	550-1350	2450	2540	VI	1.75-.500
8	HS-600	Own	T,B,Tr,R,I	DI	6-4¾x6	W	4	672	200-1800	170-1800	150-1800	14.00	....	97	16.0	640-1250	2700	....	VI	1.75-.500
9	HRS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	225-1800	191-1800	169-1800	13.50	....	99	16.0	706-1300	2700	3100	VI	1.75-.500
9	NH-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	200-2100	170-2100	137-1800	15.50	....	80	16.8	550-1600	2545	2950	VI	1.56-.422
10	NHH-600	Own	T,B,R	DI	6-5½x6	W	4	743	200-2100	170-2100	137-1800	15.50	....	80	16.7	550-1600	2265	....	VI	1.56-.422
11	NT-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	250-2100	212-2100	172-1800	15.50	....	101	14.8	695-1500	2546	3080	VI	1.56-.422
12	NHHT-6	Own	T,B,R	DI	6-5½x6	W	4	743	250-2100	212-2100	172-1800	15.50	....	101	13.7	695-1500	2365	....	VI	1.56-.422
13	NTO-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	262-2100	....	....	15.50	....	....	....	696-1500	2546	....	VI	1.56-.422
14	NHS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	275-2100	234-2100	185-1800	13.50	....	108	15.0	740-1550	2775	3160	VI	1.56-.422
15	NHRS-600	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	300-2100	258-2100	204-1800	12.00	....	119	13.8	818-1550	2775	3175	VI	1.56-.422
16	NRT-6	Own	T,B,Tr,M,R,I	DI	6-5½x6	W	4	743	335-2100	284-2100	225-1800	14.20	....	133	11.4	895-1500	2560	3060	VI	1.56-.422
17	NHHRT-6	Own	T,B,R	DI	6-5½x6	W	4	743	335-2100	284-2100	225-1800	14.20	....	133	11.4	895-1500	2385	....	VI	1.56-.422
18	NVH-1200	Own	Tr,M,R,I	DI	12-5½x6	W	4	1486	400-2100	340-2100	280-1800	15.50	....	82	18.4	1125-1550	5150	6700	VI	1.56-.422
19	VT-12	Own	Tr,M,R,I	DI	12-5½x6	W	4	1486	600-2100	490-1800	430-1800	13.50	....	126	12.3	1700-1650	5300	6250	VI	1.56-.422
20	LR-600	Own	M,R,I	DI	6-7¼x10	W	4	2477	....	300-1100	225-1000	13.50	....	72	34.6	1650-650	7790	9600	VI	2.78-.718
21	Deutz†† F8L-514	Own	T,B	SC	6-4⅝x5½	N	4	687	....	125-2300	....	17.80	....	....	....	325-1400	1430	....	VI	1.75-....
22	F8L-614	Own	T,B	SC	8-4⅝x5½	N	4	849	....	170-2300	....	17.80	....	....	....	434-1400	1874	....	VI	1.75-....
23	F12L-614	Own	T,B	SC	12-4⅝x5½	N	4	974	....	250-2300	230-2300	17.80	....	8.1	12.0	664-1200	2750	2750	VI	1.75-....
24	Fageol-Leyland 600	Leyland	T,B,Tr,M,R,I	DI	6-4.8x5½	D	4	597	160-2225	....	....	15.75	1000	....	....	455-1200	1625	1625	VI	1.90-.500
25	680	Leyland	T,B,Tr,M,R,I	DI	6-5x5½	D	4	677	180-2225	....	....	15.75	1000	....	....	504-1100	1625	1625	VI	2.00-.500
26	Fairbanks-Morse 45B3½	....	M,I	PC	1-3½x4	W	4	30.7	....	6.5-1800	5.25-1800	16.90	850	80	.8	19-....	....	430	VI	1.25-....
27	45B4½	....	M,I	PC	1-4½x4½	W	4	60.1	....	13.2-1800	10.5-1800	16.90	850	80	8.1	30-....	....	650	VI	....
28	48A4½	....	I	PC	1-4½x5	W	4	71	15-2000	12-1800	11-1800	18.00	625	68	....	55-1000	....	....	VI	1.37-.313
29	48A4½	....	M,I	PC	2-4½x5	W	4	142	33-2000	25-1800	22-1800	18.00	625	68	68.1	100-1200	....	1500	VI	1.37-.313
30	48A4½	....	M,I	PC	3-4½x5	W	4	213	50-2000	38-1800	34-1800	18.00	625	69	51.4	161-2000	....	1750	VI	1.37-.313
31	48A4½	....	M,I	PC	6-4½x5	W	4	426	100-2000	75-1800	67-1800	18.00	625	70	33.2	325-1200	....	2230	VI	1.37-.313
32	49B4½	....	M,I	DI	2-4½x5½	W	2	174	66-1800	53-1400	56-1800	16.00	1200	73	23.3	210-800	....	1350	VI	....
33	49B4½	....	M,I	DI	3-4½x5½	W	2	262	102.5-1800	80-1400	90-1800	16.00	1200	76	18.9	315-800	....	1700	VI	....
34	49B4½	....	M,I	DI	2-4½x5½	W	2	350	144-1800	105-1400	127-1800	16.00	1200	80	15.7	440-800	....	2000	VI	....
35	49B4½	....	M,I	DI	6-4½x5½	W	2	525	205-1800	158-1400	180-1800	16.00	1200	75	14.2	630-800	....	2550	VI	....
36	48A4	....	I	PC	1-4x5	W	4	63	....	11-1800	8-1200	18.00	....	84	....	45-....	....	....	VI	....
37	48A4	....	M,I	PC	2-4x5	W	4	126	....	23-1800	16-1200	18.00	....	84	101.2	90-....	....	1620	VI	....
38	48A4	....	M,I	PC	3-4x5	W	4	188	....	34-1800	25-1200	18.00	....	87	78.6	140-....	....	1865	VI	....
39	48A4	....	M,I	PC	6-4x5	W	4	377	....	68-1800	56-1200	18.00	....	87	42.5	280-....	....	2385	VI	....
40	48AS3½	....	I	PC	2-3½x4	....	4	76.8	20.3-2000	15-1800	13.5-1800	18.00	....	78	40.7	....	550	....	VI	....
41	48A4½ gas =	....	M,I	DI	4-4½x5	W	4	318	78.5-2000	56.2-1800	51.4-1800	22.00	650	87	33.1	....	1700	2100	VI	1.37-.313
42	General Motors 4-51	Own	I,Tr	DI	4-4.1x4.1	D	2	217	....	85-2500■	80-2200■	18.00	1300	80	19.6	188-1600	1180	....	....	No Valves
43	4-51	Own	T	DI	4-4.1x4.1	D	2	217	....	100-3000■	....	18.00	1300	....	....	....	1035	....	....	No Valves
44	2-71	Own	Tr,I	DI	2-4½x5	D	2	142	....	65-2000■	48-1800■	17.00	1225	74	20.0	184-1400	960	....	VI	No Valves
45	3-71	Own	I,Tr	DI	3-4¼x5	D	2	213	....	102-2100■	75-1800■	17.00	1225	77	21.4	277-1400	1605	....	VI	No Valves
46	4-71	Own	I,Tr	DI	4-4¼x5	D	2	284	....	143-2100■	101-1800■	17.00	1225	78	17.5	375-1600	1770	....	VI	No Valves
47	4-71	Own	B,T	DI	4-4¼x5	D	2	284	....	150-2300■	....	17.00	1225	....	....	....	1570	....	VI	No Valves
48	6-71	Own	I,Tr	DI	6-4¼x5	D	2	426	....	219-2100■	154-1800■	17.00	1225	80	14.3	574-1600	2210	....	VI	No Valves
49	6-71	Own	B,T	DI	6-4¼x5	D	2	426	....	230-2300■	....	17.00	1225	....	....	....	1975	....	VI	No Valves
50	6-110	Own	Tr,I	DI	6-5x5.6	D	2	660	....	300-2000■	230-1800■	18.00	1250	77	12.9	849-1400	2960	....	VI	No Valves
51	Twin 4-71	Own	I	DI	8-4¼x5	D	2	568	....	286-2100■	202-1800■	17.00	1225	78	23.9	1310-915Sh	4820‡	....	VI	No Valves
52	Twin 6-71	Own	I	DI	12-4¼x5	D	2	851	....	437-2100■	308-1800■	17.00	1225	80	18.2	2010-915Sh	6820‡	....	VI	No Valves
53	Twin 6-110	Own	I	DI	12-5x5.6	D	2	1320	....	600-2000■	460-1800■	18.00	1250	77	24.8	2975-800Sh	11440‡	....	VI	No Valves
54	Quad 6-71	Own	I	DI	24-4¼x5	D	2	1702	....	674-2100	617-1800■	17.00	1225	80	20.2	4020-915Sh	12425‡	....	VI	No Valves
55	Gray Marine Four-D109	Cont	M	PC	4-3¼x3½	W	4	129	....	30-2600	25-2000	16.25	....	77	28.0	87-1200	....	700	VI	1.25-.382
56	Four-D157	....	M	TC	4-3⅝x4½	W	4	157	....	....	30-1800	15.00	....	94	34.2	109-1800	....	1100	VI	1.19-.272
57	Four-D280	....	M	TC	4-3⅞x5½	W	4	280	....	....	50-1800	15.00	....	85	27.2	167-1200	....	1400	VI	1.37-.248
58	Six-D427	Lanova	M	TC	6-4¼x4½	N	4	427	....	....	100-2200	14.40	....	85	14.6	250-2200	....	1475	VI	1.72-.440
59	Six-D572	....	M	TC	6-4¾x5½	D	4	572	....	....	135-2200	15.00	....	85	18.6	401-1600	....	2510	VI	1.87-.548
60	Hallett AC1	Own	Tr,I	PC	1-3½x3½	N	4	35	6.5-2000	5.5-1800	5-1800	21.50	1000	80	37.0	21-1800	185	....	VI	1.25-.316
61	DI-A	Own	I,M	PC	1-3⅞x4¼	N	4	50	10-1800	10-1800	8-1500	21.60	1000	84	56.2‖	32-1800	450	625	VI	1.62-.313
62	D2	Own	I,M	PC	2-3⅞x4¼	N	4	100	22.5-1800	20-1800	18-1500	21.60	1000	87	33.0‖	64-1800	690	760	VI	1.62-.316
63	AC2	Own	I,M,Tr	PC	2-3½x3⅝	N	....	72.2	18.5-2200	18-2200	13-1800	20.00	565	82	30.7‖	42-1800	400	475	VI	1.25-.316
64	WC2	Own	I,M,Tr	PC	2-3½x3⅝	N	....	72.2	18.5-2200	18-2200	13-1800	20.00	565	82	34.6‖	42-1800	450	625	VI	1.25-.316
65	Hercules DIX-83	....	Tr,M,I	TC	2-3⅜x4	D	4	83	24-2200	20-2200	20-2200	15.50	825	87	20.0	60-1500	400	....	VI	1.56-.368
66	DIXC	Own	Tr,M,I	TC	2-4x4½	D	4	113	27-1800	23-1800	23-1800	15.50	750	92	23.9	81-1400	550	....	VI	1.62-.375
67	DIXD	Own	Tr,M,I	TC	2-4¼x4½	D	4	127	30-1800	26-1800	26-1800	15.50	750	88	21.6	91-1300	550	....	VI	1.62-.375
68	DIX4B	Own	T,B,Tr,M,R,I	TC	4-3½x4	D	4	133	46-3000	39-3000	33-2200	15.50	825	89	18.3	96-1500	600	....	VI	1.37-.350
69	DIX4D	Own	T,B,Tr,M,R,I	TC	4-3½x4	D	4	165	57-3000	48-3000	41-2200	15.50	825	90	14.6	120-1500	600	....	VI	1.56-.350
70	DD173	....	Tr,M,R,I	DI	4-3½x4½	N	4	173	50-2000	42.5-2000	40-1800	16.20	750	101	15.0	136-1500	600	....	VI	1.44-.369
71	DD198	....	Tr,M,R,I	DI	4-3⅝x4½	D	4	198	55-2000	46.5-2000	45-1800	16.20	750	100	13.3	158-1500	600	....	VI	1.44-.369
72	DOOB	Own	T,Tr,M,I,B	TC	4-3⅝x4½	D	4	199	62-2600	53-2600	41-1800	15.50	750	91	18.3	142-1400	750	....	VI	1.62-.375
73	DOOC	Own	T,Tr,M,I,B	TC	4-4x4½	D	4	226	70-2600	60-2600	47-1600	15.50	750	91	15.9	162-1400	750	....	VI	1.62-.375
74	DD226	....	Tr,M,R,I	DI	4-4x4½	N	....	226	55-2000	55-2000	52-1800	16.20	750	101	11.5	178-1500	600	....	VI	1.44-.369
75	DIX6D	Own	Tr,M,B,R,T,I	TC	6-3⅞x4	D	4	249	93-3000	79-3000	67-2200	15.50	825	90	12.0	186-1800	800	....	VI	1.56-.350
76	DOOD	Own	T,Tr,M,I,B	TC	4-4½x4½	D	4	255	79-2600	66-2600	53-1800	15.50	750	91	14.2	182-1400	750	....	VI	1.62-.375
77	DJX8	Own	T,B,Tr,M,R,I	TC	6-3½x4½	D	4	260	77-2600	66-2600	51-1800	15.50	750	87	18.6	179-1300	950	....	VI	1.62-.375
78	DD280	....	Tr,M,R,I	DI	6-3½x4½	N	4	280	75-2000	63.5-2000	60-1800	16.20	750	101	12.5	200-1500	750	....	VI	1.44-.369
79	DIX6-272	....	T,B,Tr,M,R,I	TC	6-3⅞x4	D	4	272	102.5-3000	87-3000	72-2200	15.50	825	90	11.1	204-1800	800	....	VI	1.56-.350
80	DJXC	Own	T,B,Tr,M,R,I	TC	6-3⅝x4½	D	4	298	83-2600	71-2600	59-1800	15.50	750	87	16.1	208-1300	950	....	VI	1.62-.375
81	DJXH	Own	T,B,Tr,M,I	TC	6-3⅝x4½	D	4	298	98-2600	84-2600	67-1800	15.50	750	99	14.2	234-1400	950	....	VI	1.75-.375
82	DJXHF	....	T,B,M,R	TC	6-3⅝x4½	D	4	298	98-2600	84-2600	67-1800	15.50	750	99	14.1	234-1400	950	....	VI	1.75-.375
83	DD298	....	Tr,M,R,I	DI	6-3⅝x4½	D	....	298	85-2000	72.5-2000	68-1800	16.20	750	101	11.0	232-1500	750	....	VI	1.44-.369
84	DD339	....	Tr,I	DI	6-4x4½	N	4	339	99-2000	84-2000	78-1800	16.20	750	101	9.6	262-1500	750	....	VI	1.44-.369
85	DWXC	Own	T,B,Tr,M,R,I	TC	6-4x4¾	D	4	358	120-2600	102-2600	80-1800	15.50	750	98	16.9	284-1600	1350	....	VI	1.69-.396
86	DIXV8	....	T,B	TC	8-4x4	D	4	402	160-3000	136-3000	108-2200	15.00	750	97	9.7	310-1800	1050	....	VI	1.62-.347
87	DWXD	Own	T,B,Tr,M,R,I	TC	6-4¼x4¾	D	4	404	135-2600	115-2600	91-1800	15.50	750	99	14.8	320-1600	1350	....	VI	1.69-.396

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

ENGINES—*continued*

VALVES		PISTON					PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM							START-ING METHOD		OVERALL DIMENSIONS				
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Clutch Housing (S.A.E. Numbers)	Line Number
1.16–	Alu	4.94		3	1	1.50–3.37	F		9.50	6.50	7	3.88	Own	N		Mu		Fra	Fra		Ele	45 7/16	34 7/16	44 1/16	2,3	1
1.75– .500	Alu			3	1	1.99–4.34	F		12.00	10.50	5	4.50	Own	N		Mu		Pur	Fra		Ele	43 5/16	30 1/4	47 3/16	2,1	2
1.56– .420	Alu	6.25		3	1	1.99–4.34	F		12.00	10.50	5	4.50	Own	N		Mu		Pur	Fra		Ele	45	28 1/16	44 5/16	2,1	3
1.75– .500	CI	6.25	10.56	3	1	1.99–4.09	F		12.00	10.50	7	4.50	Own	N		Mu		Fra	Fra		Ele	57 7/16	30 1/4	48 1/16	2,1,0	4
1.75– .500	Alu	6.25	8.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Fra	Fra		Ele	57 7/16	30 1/4	48 1/16	2,1,0	5
1.75– .500	Alu	6.25	8.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Fra	Fra		Ele	61 7/16	30 1/4	48 1/16	2,1,0	6
1.75– .500	Alu	6.25		3	1	1.99–4.09	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	58 7/16	28 7/16	49 1/16	2,1,0	7
1.75– .500	Alu	6.25	8.65	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	61 7/16	28 7/16	49 1/16	2,1,0	8
1.56– .420	Alu	6.25	9.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Fra	Fra		Ele	63 11/16	55 1/4	22 5/8	2,1	9
1.56– .420	Alu	6.25	9.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Fra	Fra		Ele	58 7/16	30 1/4	48 1/16	2,1,0	10
1.56– .420	Alu	6.25	9.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	60 7/16	38 7/16	48 7/16	2,1,0	11
1.56– .420	Alu	6.25	9.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	63 11/16	55 1/16	22 5/8	2,1	12
1.56– .420	Alu	6.25	9.75	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	60 7/16	38 7/16	48 7/16	1,0	13
1.56– .420	Alu	6.25	9.65	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	60 7/16	32 5/16	48 1/16	1,0	14
1.56– .420	Alu	6.25	9.65	3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	60 7/16	32 5/16	48 1/16	1,0	15
1.56– .420	Alu	6.25		3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	60 7/16	38 7/16	48 7/16	1,0	16
1.56– .420	Alu	6.25		3	1	1.99–4.34	F		12.00	10.50	7	4.50	Own	N		Mu		Pur	Fra		Ele	63 11/16	55 1/4	22 5/8	1	17
1.56– .420	Alu	6.25		3	1	1.99–4.34	F		12.00		7	5.00	Own	N		Mu		Fra	Fra		Ele	73	41	58 1/16	0,00	18
1.56– .420	Alu	6.25	8.65	3	1	1.99–4.34	F		12.00		7	5.00	Own	N		Mu		Pur	Fra		Ele	73	41	73	0,00	19
1.56– .420	Alu	6.25	8.65	3	1	1.99–4.34	F		12.00		7	5.50	Own	N		Mu		Don	Fra			98	44 5/16	58 3/4	0,00	20
2.75– .718	Alu	10.66		3	2	2.88–6.00	F		16.00		7	5.50	Own	N		Mu		Don	Fra			98	44 5/16	58 3/4	0,00	20
1.60– .500	AA	6.60	7.21	3	2	1.63–4.20	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 3/4	40	1,2,3	21
1.73– .500	AA	6.60	7.35	3	2	1.63–4.20	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 3/4	40	1,2,3	22
1.63–	Alu	6.00		3	2	1.57–3.62	F		10.82		7	3.54	AB	AB	C	Pi	1775	Man	AB		Ele	65	47 1/16	37 1/16		23
1.60– .500	AA	6.60	7.21	3	2	1.63–4.20	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 3/4	40	1,2,3	24
1.70– .500	AA	6.60	7.35	3	2	1.63–4.40	F	EN16S	10.50	7.38	7	3.50	CBR	Own	C	Mu	2100	Opt	Opt	L-D	Ele	52 1/4	25 3/4	40	1,2,3	25
1.00–	Alu			3	1		F				2	2.00	Dem	Dem	C	Pi	1750	AC	AC	AL	E-H	18		21 1/16		26
	Alu			3	1		F				2	2.50	Dem	Dem	C	Pi	1750	AC	AC	AL	E-H	30		34		27
1.37– .313	CI	5.46	6.20	3	2	1.50–4.00	F	1035	10.87	6.60	2	2.75	Own	Own	O	Si		AM	Fra	AL	Opt	23	23	38		28
1.37– .313	CI	5.93	6.20	3	2	1.50–4.00	F	1035	10.87	6.60	3	2.75	Own	Own	O	Si		AM	Fra	AL	Opt	30	23	38		29
1.37– .313	CI	5.31	6.20	3	2	1.50–4.00	F	1035	10.87	6.60	4	2.75	Own	Own	O	Si		AM	Fra	AL	Ele	35	23	38		30
1.37– .313	CI	5.46	6.20	3	2	1.50–4.00	F	1036	10.87	6.60	7	3.18	Own	Own	O	Si		AM	Fra	AL	Ele	50	24	40		31
2.30– .520	Alu	6.36	6.75	3	2	1.75–3.85	F	1141	11.87	8.25	3	4.00	RM	AB	C	Si	2200	Don	Com	AL	Ele	32 1/16	28 1/16	40 7/16	1	32
2.30– .520	Alu	6.36	6.75	3	2	1.75–3.85	F	1141	11.87	8.25	4	4.00	RM	AB	C	Si	2200	Don	Com	AL	Ele	38 7/16	28 1/16	40 7/16	1	33
2.30– .520	Alu	6.36	6.75	3	2	1.75–3.85	F	1141	11.87	8.25	5	4.00	RM	AB	C	Si	2200	Don	Com	AL	Ele	45 1/16	28 1/16	40 7/16	1	34
2.30– .520	Alu	6.36	6.75	3	2	1.75–3.85	F	1141	11.87	8.25	7	4.00	RM	AB	C	Si	2200	Don	Com	AL	Ele	59 7/16	28 1/16	40 7/16	1	35
	CI			3	2		F	1035			2	2.75	Own	Own	O	Si		AM	Fra	AL	E-H	36 1/16	24	46		36
	CI			3	2		F	1035			3	2.75	Own	Own	O	Si		AM	Fra	AL	E-H	44 5/16	28	45		37
	CI			3	2		F	1038			4	2.75	Own	Own	O	Si		AM	Fra	AL	E-H	54	30	46 1/16		38
	CI			3	2		F	1038			7	3.18	Own	Own	O	Si		AM	Fra	AL	Ele	69 1/2	30	46 1/2		39
	CI						F				3	2.00	Own	Own	O	Si		AM	Fra	AL	E-H	33	22	31		40
1.37– .313	CI	5.54	6.62	3	2	1.50–4.18	F	1035	10.87	6.60	5	3.19	Own	Own	O	Si		AM	Fra	AL	Ele	52	24	40		41
No Valves	AT	5.06	6.10	4	2	1.38–3.37	F	1141A	8.40	3.93	5	3.62	Own	Own	C	Mu	350	Don	Com	DR	Ele	38 11/16	25 11/16	33 7/16	2	42
No Valves	AT	5.06	6.10	4	2	1.38–3.37	F	1141A	8.40	3.93	5	3.62	Own	Own	C	Mu	350	Don	Com	DR	Ele	38 11/16	25 11/16	33 7/16	2	43
1.88– .375	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	3	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	31	28 7/16	40 1/2	2	44
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	4	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	36 1/16	29 1/16	41 11/16	2	45
1.88– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	5	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	42 5/16	29 1/2	41 11/16	2	46
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	5	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele				2	47
1.88– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	7	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	53 11/16	31 11/16	42 11/16	1	48
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	7	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele				1	49
1.93– .454	AT	6.50	11.00	4	2	1.63–4.34	F	1141A	10.60	7.36	7	4.00	Own	Own	C	Mu	450	Don	Com	DR	Ele	70 7/16	31 7/16	48 1/16	½	50
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	10	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	74 1/16	56	57 1/16		51
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	14	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	85 1/16	56	57 1/16		52
1.93– .454	AT	6.50	11.00	4	2	1.63–4.34	F	1141A	10.60	7.36	14	4.00	Own	Own	C	Mu	450	Don	Com	DR	Ele	123 1/16	60	67 1/16		53
1.56– .394	AT	6.16	7.83	4	2	1.50–3.62	F	1141A	10.12	6.14	28	3.50	Own	Own	C	Mu	450	Don	Com	DR	Ele	181 1/16	57 7/16	68 1/16		54
1.00– .352	Alu	3.56		3	1	.968–2.68	F	1035	6.38		3	2.50	RM			Pi	1850	N	Fra	DR	Ele	44 1/16	24 1/16	28 1/16		55
1.09– .273	AA	3.75		3	2	1.12–2.75	F	1035	7.00		3	2.47	AB	AB		Pi	1800	Own	ACB	AL	Ele	50	20 1/16	30 1/16	3	56
1.25– .248	AA	4.31		3	2	1.25–3.31	F	1035	9.50		3	2.87	AB	AB		Pi	1800	Own	ACB	AL	Ele	55	21 1/16	34	3	57
1.50– .440	AA	4.68		3	2	1.43–3.62	F		8.37		7	2.87	AB	AB		Pi	1800	Own	Pur	DR	Ele	67	29	27	3	58
1.66– .546	AA	6.00		3	2	1.50–4.00	F	1035	10.50	4.72	5	3.37	AB	AB		Pi	1800	Own	Fra	DA	Ele	72	26	40 5/16	1	59
1.25– .315	AA		2.25	4	1	1.31–2.96	F	4140	7.00	2.75	2		AB	AB		Pi	1800	AM	Pur	AL	Ele	20 7/16	15	25 3/4		60
1.62– .313	Alu	5.25	4.00	4	1	1.37–3.40	F	1045	9.00	4.67	2		AB	AB		Pi	1800	AM	Pur	AL	Ele	26	24	30 1/16		61
1.62– .315	Alu	5.25	4.00	4	1	1.37–3.40	F	1045	9.00	4.67	2		AB	AB		Pi	1800	AM	Com	AL	Ele	32 7/16	23	30		62
1.25– .315	AA	3.88	2.25	4	1	1.31–2.96	F	4140	7.00	2.75	2		AB	AB		Pi	1800	AM	Pur	AL	E-H	33	25	28		63
1.25– .315	AA	3.88	2.25	4	1	1.31–2.96	F	4140	7.00	2.75	2		AB	AB		Pi	1800	AM	Pur	AL	Ele	33	25	28		64
1.12– .350	Alu	4.03	3.20	3	2	1.13–2.87	F	CNM	7.75	4.20	3	2.75	AB	AB	C	Pi	1650			LDA	A-EI	19 1/16	21 1/16	30 1/16		65
1.12– .375	Alu	4.84	4.00	4	2	1.18–3.45	F	CNM	8.00	5.31	2	3.81	AB	AB	C	Pi	1450			DR	EAH	23 1/16 (2)	19 3/4	36 5/16	2	66
1.12– .375	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.00	5.31	2	3.81	AB	AB	C	Pi	1450			DR	EAH	23 1/16 (2)	19 3/4	36 5/16	2	67
1.12– .350	Alu	4.03	3.20	3	2	1.12–2.62	F	CNM	7.75	4.20	5	2.75	AB	AB	C	Pi	1650			LDA	AEL	29 11/16 (2)	21 1/16	30 1/16	2,4	68
1.12– .350	Alu	4.03	3.20	3	2	1.12–2.87	F	CNM	7.75	4.20	5	2.75	AB	AB	C	Pi	1650			LDA	AEL	29 11/16 (2)	21 1/16	30 1/16	2,4	69
1.25– .369	AA	5.00		3	2	1.13–2.84	F	3140	8.00	2.72	5	2.50	A-R	AB	C	Mu	3000			LDA	Ele	31 11/16	22 1/16	33		70
1.25– .369	AA	5.00	3.35	3	2	1.13–3.03	F	3140	8.00		5	2.50	A-R	AB	C	Mu	3000			LDA	Ele	31 11/16	22 1/16	33		71
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/16	36	1,5	72
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/16	36	1,5	73
1.12– .379	Alu	4.84	4.00	4	2	1.18–3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/16	36	1,5	74
1.25– .369	AA	5.00		3	2	1.13–3.34	F	3140	8.00	2.72	5	2.50	A-R	AB	C	Mu	3000	Opt	Opt	LDA	Ele	31 11/16	22 1/16	33		74
1.12– .350	Alu	4.03	3.20	3	2	1.12–2.87	F	CNM	7.75	4.20	7	2.75	AB	AB	C	Pi	1650			LDA	AEG	38 7/16 (2)	23 1/16	37 1/16	2,4	75
1.12– .375	Alu	4.84	4.47	4	2	1.18–3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650			LDA	AEG	32 7/16 (2)	22 1/16	36	1,5	76
1.12– .375	Alu	4.84	3.12	4	2	1.18–2.95	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 7/16	32 1/16	1,3	77
1.25– .369	AA	5.00		3	2	1.13–2.84	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000			LDA	Ele	40 7/16	22 1/16	35 1/16		78
1.12– .350	Alu	4.03	3.50	3	2	1.12–3.00	F	CNM	7.75	4.20	7	2.75	AB	AB	C	Pi	1650			LDA	AEG	38 7/16	23 1/16	37 1/16		79
1.12– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 7/16	32 1/16	1,3	80
1.31– .375	Alu	4.84	3.56	3	2	1.18–3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	AEG	39 (2)	22 7/16	34 5/16	1,3	81
1.31– .375	Alu	4.84	3.56	4	2	1.18–3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650			LDA	A-EI	38 5/16	34	23 7/16		82
1.25– .369	AA	5.00	3.35	3	2	1.13–3.03	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000			LDA	Ele	40 7/16	22 1/16	35 1/16		83
1.25– .369	AA	5.00		3	2	1.13–3.34	F	3140	8.00	2.72	7	2.50	A-R	AB	C	Mu	3000					40 7/16	22 1/16	35 1/16		84
1.25– .395	Alu	4.84	4.00	3	2	1.50–3.62	F	CNM	8.50	7.31	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44 5/16 (2)	27	42 7/16	1,3	85
1.37– .347	Alu	4.03	3.75	3	2	1.13–3.38	F	CNS	7.75	4.00	5	3.50		AB	C	Pi	2000				Ele	38 1/16	32 1/16	37 7/16		86
1.25– .395	Alu	4.84	4.47	3	2	1.50–3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44 5/16 (2)	27	42 7/16	1,3	87

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

1956 AUTOMOTIVE DIESEL

Line Number	ENGINE MAKE AND MODEL	Built Under License from	GENERAL: Designed for	Type	Number of Cylinders Bore and Stroke (in.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. in.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	VALVES: Arrangement	VALVES: Intake Port Diameter and Lift (in.)
	Hercules—Continued																			
1	DWXLD	Own	T,B,Tr,M,R,I	TC	6-4¼x5	D	4	426	142-2600	121-2600	95-1800	15.50	750	98	14.2	333-1600	1350		VI	1.66-.395
2	DWXLDF	Own	B,M,R	TC	6-4¼x5	D	4	426	142-2600	121-2600	90-1800	15.50	750	93	14.7	319-1400	1325		VI	1.66-.395
3	DRXB	Own	T,B,Tr,M,R,I	TC	6-4⅝x5¼	D	4	474	134-2200	114-2200	90-1600	15.00	750	95	17.8	358-1200	1600		VI	2.00-.395
4	DRX-501		B	DT	6-4½x5¼	D	4	501	139-2200	118-2200	96-1600	15.00	750	95	16.7	388-1500	1600		VI	2.00-.395
5	DRXC	Own	T,B,Tr,M,R,I	TC	6-4⅝x5¼	D	4	529	147-2200	125-2200	100-1600	15.00	750	95	16.0	395-1200	1600		VI	2.00-.395
6	DFXB	Own	T,B,M,Tr,I	TC	6-5x6	D	4	707	190-2100	162-2100	136-1600	14.80	750	95	18.4	530-1350	2500		VI	2.37-.500
7	DFXC	Own	T,B,M,Tr,I	TC	6-5¼x6	D	4	779	204-2100	173-2100	149-1600	14.80	750	95	16.6	585-1350	2500		VI	2.37-.500
8	DFXD	Own	T,B,M,Tr,I	TC	6-5½x6	D	4	855	217-2100	184-2100	162-1600	14.80	750	94	15.4	645-1200	2500		VI	2.37-.500
9	DFXE	Own	T,B,Tr,M,R,I	TC	6-5⅝x6	D	4	895	228-2100	194-2100	170-1600	14.80	750	94	14.7	660-1200	2500		VI	2.37-.500
10	DFXETS		T,B,Tr,M,R,I	DI	6-5⅝x6	D	4	895	318-2000	260-2000	218-1600	14.80	750	120	13.7	846-1800	3000		VI	2.61-.500
11	DFXH	Own	T,B,Tr,M,R,I	TC	6-5¾x6	D	4	935	260-2100	221-2100	187-1600	14.80	750	99	13.9	750-1200	2600		VI	2.60-.500
12	DFXHF	Own	B,M,R	TC	6-5¾x6	D	4	935	260-2100	221-2100	187-1600	14.80	750	99	13.9	750-1200	2600			2.60-.500
13	DNXV8D	Own	T,B,Tr,M,I	TC	8-6¼x6	D	4	1468	388-1800	330-1800	280-1600	14.80	750	94	15.1	1100-1200	4200		VI	2.87-.500
14	DNXV8DTS	Own	M,I	TC	8-6¾x6	D	4	1468	500-1800	425-1800	345-1600	14.80	750	115	13.9	1320-1400	4800		VI	2.87-.500
15	**Hill** 2R	Own	M,I	PC	2-3½x5½	D	4	106	19-1500	17.3-1500	16.6-1500	16.00		85	64.04	69-1200	1225	1300	VI	1.37-.372
16	4R	Own	M,I	PC	4-3½x5½	D	4	212	41-1500	36.3-1500	33-1500	16.00		85	44.04	142-1200	1615	1750	VI	1.37-.372
17	6R	Own	M,I	PC	6-3½x5½	D	4	317	63-1500	55-1500	50-1500	16.00		85	37.54	225-1200	2150	2300	VI	1.37-.372
18	4F	Own	M,I	PC	4-3⅝x5½	D	4	243	48-1500	41-1500	39-1500	16.50		90	41.44	175-1200	1615	1750	VI	1.37-.372
19	6F	Own	M,I	PC	6-3⅝x5½	D	4	364	72-1500	61.5-1500	58-1500	16.50		90	37.14	262-1200	2150	2300	VI	1.37-.372
20	6K	Own	M,I	PC	6-4½x5½	D	4	488	88-1500	72-1500	69-1500	17.00		89	31.64	290-1200	2150	2300	VI	1.57-.372
21	**International** UD264	Own	Tr,I	PC	4-4x5½	D	4	264	57.5-1800	55-1800	42.7-1800	16.40		71	29.3	191-1100	1250		VI	1.50-.500
22	UD-350	Own	Tr,I	PC	4-4½x5½	D	4	350	78.5-1800	75-1800	56-1800	15.61		73	27.6	252-1250	1600		VI	1.66-.500
23	UD14A	Own	Tr,I	PC	4-4⅝x6½	W	4	461	105-1800	76-1400	60.8-1400	15.00		75	29.2	345-1050	1775		VI	1.78-.532
24	UD525	Own	I	PC	6-4½x5½	D	4	525	141-2300	115-1800	86.5-1800	15.40		72	28.3	388-1230	2190		VI	1.66-.532
25	UD18A	Own	Tr,I	PC	6-4⅝x6½	W	4	691	131-1600	125-1600	100-1800	16.50		72	28.6	470- 900	2860		VI	1.78-.532
26	UD1091	Own	Tr,I	PC	6-5¾x7	D	4	1091	213-1500	190-1400	152-1400	15.00		79	26.9	820-1050	4095		VI	2.31-.625
27	**Kermath** *2-127		M	TC	2-4¼x4½	D	4	127	28-1600	27-1800	20-1800	15.50	750	76	43.5	81-1400		870	VI	1.62-.375
28	***4-226		M	TC	4-4x4½	D	4	226	70-2600	60-2600	50-2000	15.50	750	66	24.5	162-1400		1230	VI	1.62-.375
29	***6-298		M	TC	6-3⅜x4½	D	4	298	83-2600	75-2200	60-1900	15.50	750	64	21.5	208-1500		1355	VI	1.62-.375
30	*6-529		M	TC	6-4⅝x5¼	D	4	529	147-2200	140-2000	120-1800	14.50	750	95	16.8	585-1350		2100	VI	2.00-.395
31	*6-835		M	TC	6-5¾x6	D	4	835	260-2100	250-2000	190-1600	14.50	750	99	24.5	750-1200		4200	VI	2.37-.500
32	**Mack** END673		T,B	AS	6-4⅞x6	D	4	672	170-2100	168.4-2100†		16.89	1250			480-1200	1927		VI	2.05-.563
33	ENDT673		T,B,Tr,R	AS	6-4⅞x6	D	4	672	206-2100	190-2100		16.89	1575	125		560-1400	1930		VI	2.05-.563
	Minneapolis-Moline																			
34	D283	Lanova	Tr,I	EC	4-4¼x5	N	4	284	49-1300			14.90				210-1100	1590		VI	1.50-.484
35	D425	Lanova	Tr,I	EC	6-4¼x5	N	4	426	75-1300			14.90				320- 950	2190		VI	1.50-.484
36	**Murphy** ME-4, ME-90	Own	I,M	DI	4-5⅝x6½	W	4	675		112-1200	96-1200	16.00		88	44.84	475- 950	+4300	‡6650	V4	1.62-.500
37	11, AA-107	Own	I,M	DI	4-5⅝x6½	W	4	675		117-1200	107-1200	16.3		98	40.34	530- 800	+4300	‡6650	V4	1.62-.500
38	*111, AAA-123	Own	I,M	DI	4-5⅝x6½	W	4	675		133-1200	123-1200	16.0		112	35.44	560-1050	+4350	‡6825	V4	1.62-.500
39	12, AB-117	Own	I,M	DI	4-6x6½	W	4	735		127-1200	117-1200	16.00		98	36.84	600- 750	+4300	‡6650	V4	1.62-.500
40	*112	Own	I	DI	4-6x6½	W	4	735		149-1200	133-1200	16.0		112	32.7	840- 950	+4350		V4	1.62-.500
41	20, BJ-144	Own	I,M	DI	6-5½x6½	W	4	927		158-1200	144-1200	16.0		98	36.14	710- 800	+5200	‡8000	V4	1.37-.500
42	*20G				6-5½x6½	W		927		158-1200	144-1200			98	36.1	700- 800	+5200		V4	
43	*120, ABJ-155	Own	I,M	DI	6-5½x6½	W	4	927		170-1200	155-1200	16.0		103	34.24	740- 800	+5300	‡8285	V4	1.37-.500
44	21	Own	I	DI	6-5⅝x6½	W	4	1013		176-1200	161-1200	16.00		98	32.3	825- 800	+5200		V4	1.62-.500
45	*21G				6-5⅝x6½	W		1013		176-1200	161-1200			98	32.3	805- 800	+5200		V4	
46	*121	Own	I	DI	6-5⅝x6½	W	4	1013		202-1200	182-1200	16.00		111	29.3	860- 850	+5300		V4	1.62-.500
47	22	Own	I	DI	6-6x6½	W	4	1103		193-1200	177-1200	16.00		99	29.4	920- 800	+5200		V4	1.62-.500
48	*122	Own	I	DI	6-6x6½	W	4	1103		221-1200	203-1200	16.00		114	36.1	920- 900	+5300		V4	1.62-.500
49	211, BAA-118	Own	I,M	DI	4-5⅝x6½	W	4	675		126-1400	118-1400	16.00		92	36.44	510-1000	+4300	‡6850	V4	1.62-.500
50	*311, CAA-133	Own	I,M	DI	4-5⅝x6½	W	4	675		143-1400	133-1400	16.00		106	32.74	565-1000	+4350	‡6825	V4	1.62-.500
51	212, BAB-128	Own	I,M	DI	4-6x6½	W	4	735		136-1400	128-1400	16.00		92	33.64	567-1000	+4300	‡6850	V4	1.62-.500
52	*312, CAB-144	Own	I,M	DI	4-6x6½	W	4	735		154-1400	144-1400	16.00		104	30.24	635-1000	+4350	‡6825	V4	1.62-.500
53	220, BBJ-167	Own	I,M	DI	6-5½x6½	W	4	927		169-1400	157-1400	16.00		88	33.14	685-1000	+5200	‡8000	V4	1.37-.500
54	*320, CBJ-170	Own	I,M	DI	6-5½x6½	W	4	927		182-1400	170-1400	16.00		96	31.24	720-1000	+5300	‡8265	V4	1.37-.500
55	221	Own	I	DI	6-5⅝x6½	W	4	1013		185-1400	173-1400	16.00		90	30.1	760-1000	+5200		V4	1.62-.500
56	*321	Own	I	DI	6-5⅝x6½	W	4	1013		210-1400	197-1400	16.00		103	26.9	850-1000	+5300		V4	1.62-.500
57	222	Own	I	DI	6-6x6½	W	4	1103		204-1400	190-1400	16.00		94	27.4	835-1000	+5200		V4	1.62-.500
58	*322	Own	I	DI	6-6x6½	W	4	1103		235-1400	220-1400	16.00		105	24.1	945-1000	+5300		V4	1.62-.500
59	*21G				6-5⅝x6½	W		1013	-1200	-1200	158-1200				29.7	690-1200	+4700		V4	
60	*22G				6-6x6½	W		1103	-1200	193-1200	177-1200				26.6	780-1200	+4700		V4	
61	24				6-6¾x6½	W		1245	-1200	213-1200	196-1200				23.7	860-1200	+4700		V4	
62	*124				6-6¾x6½	W		1245	-1200	240-1200	225-1200				21.3	970-1200	+4800		V4	
63	*220G				6-5½x6½	W		927	-1400	169-1400	157-1400				29.9	570-1400	+4700		V4	
64	*221G				6-5⅝x6½	W		1013	-1400	185-1400	173-1400				27.2	640-1400	+4700		V4	
65	*222G				6-6x6½	W		1103	-1400	204-1400	190-1400				24.6	700-1400	+4700		V4	
66	224				6-6¾x6½	W		1245	-1400	230-1400	214-1400				21.9	790-1400	+4700		V4	
67	*324				6-6¾x6½	W		1245	-1400	257-1400	241-1400				19.9	890-1400	+4800		V4	
68	*24G				6-6¾x6½	W		1245	200-1200	213-1200	198-1200				23.7	1010- 800	4700		V4	
69	*224G				6-6¾x6½	W		1245	215-1400	230-1400	214-1400				21.9	910-1000	4700		V4	
70	AAB-134	Own	M	DI	4-6x6½	W	4	735			134-1200	16.00		112	50.9	840- 950		6825	V4	1.62-.500
71	BA-163	Own	M	DI	6-5⅝x6½	W	4	1013			163-1200	16.00		98	49.1	825- 600		8000	V4	1.62-.500
72	BB-179	Own	M	DI	6-6x6½	W	4	1103			179-1200	16.00		99	44.7	920- 600		8000	V4	1.62-.500
73	ABA-184	Own	M	DI	6-5¾x6½	W	4	1013			184-1200	16.00		111	44.9	960- 850		8265	V4	1.62-.500
74	BD-200		M		6-6¾x6½	W		1245			200-1200					860-1200			V4	
75	ABB-205	Own	M	DI	6-6x6½	W	4	1103			205-1200	16.00		114	40.3	950- 900		8265	V4	1.62-.500
76	ABD-227		M		6-6¾x6½	W		1245			227-1200					970-1200			V4	
77	BBA-175	Own	M	DI	6-5¾x6½	W	4	1013			175-1400	16.00		90	45.6	760-1000		8000	V4	1.62-.500
78	BBB-192	Own	M	DI	6-6x6½	W	4	1103			192-1400	16.00		94	41.6	835-1000		8000	V4	1.62-.500
79	CBA-199	Own	M	DI	6-5¾x6½	W	4	1013			199-1400	16.00		103	41.5	850-1000		8265	V4	1.62-.500
80	CBB-222	Own	M	DI	6-6x6½	W	4	1103			222-1400	16.00		105	37.2	945-1000		8265	V4	1.62-.500
81	CBD-243		M		6-6¾x6½	W		1245			243-1400					990-1400			V4	

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

ENGINES—*continued*

VALVES		PISTON					PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM								STARTING METHOD		OVERALL DIMENSIONS				
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked In—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Clutch Housing (S.A.E. Numbers)	Line Number
1.25-.395	Alu	4.84	4.47	3	2	1.50-3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	44⅝ (2)	27	42¼	1,3	1
1.25-.395	Alu	4.84	4.47	3	2	1.50-3.62	F	CNM	8.50	7.00	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	55⅛ (2)	39⅞	17¾	1,3	2
1.37-.395	Alu	6.84	7.08	4	2	1.62-3.75	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	46⅞ (2)	26½	38⅝	1,2	3
1.37-.395	Alu	6.84	8.90	4	2	1.62-3.84	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650				Ele	29⅛	21⅛	30⅞		4
1.37-.395	Alu	6.84	7.93	4	2	1.62-3.93	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650			LDA	AEG	46⅞ (2)	26½	38⅝	1,2	5
1.62-.500	Alu	7.53	9.94	4	2	2.00-4.18	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅝ (2)	30⅛	46¾	0,1	6
1.62-.500	Alu	7.53	11.69	4	2	2.00-4.42	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅝ (2)	30⅛	46¾	0,1	7
1.62-.500	Alu	7.53	12.37	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅝ (2)	30⅛	46¾	0,1	8
1.62-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅝ (2)	30⅛	46¾	0,1	9
1.91-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	73½	30⅛	46		10
1.90-.500	Alu	7.53	12.60	4	2	2.00-4.90	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61⅝ (2)	30	47¾	0,1	11
1.62-.500	Alu	7.53	12.34	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.50	AB	AB	C	Pi	2000			LDA	AEG	61½ (2)	48⅛	31⅝	0,1	12
2.12-.500	Alu	7.53	12.90	4	2	2.00-5.40	F	CNM	13.25		5	4.50	AB	AB	C	Pi	2000			LD	AEG	56⅝ (2)	42	55¾	0,1	13
2.12-.500	Alu	7.53	12.90	4	2	2.00-5.40	F	CNM	13.25		5	4.50	AB	AB	C	Pi	2000			LD	AEG	76 (2)	42	55¾	0,1	14
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	3	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	E-H	35	25	40	1	15
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	5	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	Ele	47½	25	40	1	16
1.37-.372	Lyn	4.87	2.83	3	2	1.50-2.72	F	4140	13.25	7.3	7	2.93	AB	A-E	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	17
1.37-.372	Lyn	4.87	3.25	3	2	1.50-2.96	F	4140	13.25	7.3	5	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	47½	25	40	1	18
1.37-.372	Lyn	4.87	3.25	3	2	1.50-2.96	F	4140	13.25	7.3	7	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	19
1.37-.372	Lyn	4.87	4.81	3	2	1.50-3.46	F	4140	13.25	7.3	7	2.93	AB	AB	C	Pi	1800	Uni	Fra	AL	Ele	58	27	45	1	20
1.31-.500	AA	5.70	4.91	3	2	1.31-3.25	F	1040	10.00	7.48	5	3.75	Own	Own	C	Si	700	Don	Pur	Own	GS	38½	24⅛	48¼	2	21
1.47-.500	AA	6.44	6.64	3	2	1.50-3.71	F	1040	11.00	8.88	5	4.13	Own	Own	C	Si	700	Don	Pur	Own	GS	41½	24⅞	53⅞	1	22
1.53-.532	AA	6.19	7.36	4	2	1.62-4.09	F	1040	13.25	12.06	5	3.25	Own	Own	C	Si	700	Don	Pur	Own	GS	47⅞	28⅝	54⅝	1	23
1.41-.532	AA	6.44	6.75	3	2	1.50-3.71	F	1040	11.00	8.88	7	3.56	Own	Own	C	Si	700	Don	Pur	Own	GS	56¾	30⅛	65⅝	1	24
1.53-.532	AA	6.19	7.53	4	2	1.62-4.10	F	1040	13.25	12.06	7	3.50	Own	Own	C	Si	700	Don	Pur	Own	GS	60⅞	31⅞	59	0	25
1.66-.625	AA	7.50	12.79	3	2	1.88-5.00	F	1040	13.25	15.81	7	4.12	Own	Own	C	Si	700	Don	Pur	Own	GS	71⅛	32¼	81⅝	0	26
1.12-.375	Alu	4.84	4.00	4	2	1.18-3.45	F	CNM	8.00	5.31	2	3.81	AB	AB	C	Pi	1650	AC	Pur	DR	Ele	41⅜	23	30⅝		27
1.12-.375	Alu	4.84	4.00	4	2	1.18-3.45	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	AC	Pur	DR	Ele	47¼	22½	33		28
1.12-.375	Alu	4.84	3.56	4	2	1.18-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650	AC	Pur	DR	Ele	54⅛	22½	33		29
1.37-.395	Alu	6.84	7.93	4	2	1.62-3.93	F	CNM	9.37	8.59	7	3.50	AB	AB	C	Pi	1650	AM	Pur	DR	Ele	60⅞	27⅝	37⅛		30
1.90-.500	Alu	7.53	12.39	4	2	2.00-4.65	F	CNM	12.00	13.75	7	4.45	AB	AB	C	Pi	2000	AM	Pur	DR	Ele	68⅞	34¼	54⅝		31
1.69-.563	AA	5.64	7.07	3	2	1.63-4.22	F	4130	11.25	7.75	7	4.00	AB	AB	C	Mu	2306	Ver	P-L	LDI	A-EI	53½	30¾	46¼	1	32
1.69-.563	AA	5.64	7.07	3	2	1.63-4.22	F	4130	11.25	7.75	7	4.00	AB	AB	O	Mu	2300	Pur	P-V	LDI	A-EI	53½	30¾	46½		33
1.38-.495	AA	5.06	4.72	3	2	1.50-3.62	F	1041	10.00	6.96	3	2.91	AB	AB	C	Pi	1800	Don	Own	DR	Ele	42⅛	24⅞	40⅝	2	34
1.38-.495	AA	5.06	4.72	3	2	1.50-3.62	F	1041	10.00	6.96	4	2.91	AB	AB	C	Pi	1800	Don	Own	DR	Ele	56	24⅝	42¾	2	35
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	36
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	37
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	38
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	39
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	40
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	75⅛	37	60½	00	41
							F				7	4.00	Own	Own							Ele	75⅛	37	77⅛		42
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	75⅛	37	54⅛	00	43
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	60½	00	44
							F				7	4.00	Own	Own							Ele	75⅛	37	77⅛		45
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	54⅛	00	46
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	77⅛	00	47
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	54⅛	00	48
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	49
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	50
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	51
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	52
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	53
1.37-.500	CI	7.75	19.7	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	54⅛	0	54
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	55
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	54⅛	0	56
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	57
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	54⅛	0	58
											7	4.00									Ele	75⅛	37	77⅛		59
											7	4.00									Ele	75⅛	37	77¼		60
											7	4.00									Ele	76⅛	37	64¼		61
											7	4.00									Ele	76⅛	37			62
											7	4.00									Ele	77⅛	37			63
											7	4.00									Ele	77⅛	37			64
											7	4.00									Ele	77⅛	37			65
											7	4.00									Ele	77⅛	37	64¼		66
											7	4.00									Ele	77⅛	37			67
							F	DFS			7	4.00									Ele	77⅛	38	63		68
							F	DFS			7	4.00									Ele	77⅛	38	63		69
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	5	4.00	Own	Own		Mu		Don	Own		Ele	58⅛	29⅛	62⅛	0	70
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	60½	00	71
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	77⅛	00	72
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	54⅛	00	73
											7	4.00									Ele	76⅛	37	64¼		74
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	76⅛	37	54⅛	00	75
											7	4.00									Ele	76⅛	37			76
1.62-.500	CI	7.75	23.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	77
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	60½	0	78
1.62-.500	CI	7.75	22.2	4	2	2.12-4.73	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	54⅛	0	79
1.62-.500	CI	7.75	23.7	4	2	2.12-4.98	F	1045	12.50	17.75	7	4.00	Own	Own		Mu		Don	Own		Ele	77⅛	37	54⅛	0	80
											7	4.00									Ele	77⅛	37			81

For abbreviations, see pages 280 and 281

For Directory of the Engine Manufacturers listed above, see page 286

1956 AUTOMOTIVE DIESEL

Line Number	Engine Make and Model	Built Under License from	Designed for	Type	Number of Cylinders Bore and Stroke (In.)	Cylinder Liners—Type	Cycle	Piston Displacement (Cu. In.)	With Bare Engine: Maximum Brake Hp. at Specified R.P.M.	With Standard Accessories: Max. Intermittent Hp. at Specified R.P.M.	With Standard Accessories: Continuous Sustained Hp. at Specified R.P.M.	Compression Ratio—to 1	Max. Combustion Pressure (Lb. per Sq. In.)	B.M.E.P. at Continuous Hp. (Lb. per Sq. In.)	Weight per Continuous Hp. (Lb.)	Max. Torque in Lb. Ft. at Specified R.P.M.	Shipping Weight (Lb.): Automotive or Industrial	Shipping Weight (Lb.): Marine	Valves: Arrangement	Valves: Intake Port Diameter and Lift (In.)
1	Oliver Super 99D	Lanova	Tr	EC	6-4x4	D	4	302		69-1675	55-1675	15.50		86	15.4	229-1200	845		I	1.38-.344
2	166D	Lanova	I	EC	4-3½x3¾	W	4	129		24.2-2000	21.2-1800	15.50		72	32.1	88-800	680		I	1.06-.313
3	177D	Lanova	I	EC	6-3½x3¾	W	4	194		38.2-2000	33-1800	15.50		75	28.0	134-800	925		I	1.06-.313
4	188D	Lanova	I	EC	6-3½x4	W	4	231		44.5-2000	38.8-1800	15.50		74	25.3	159-800	980		I	1.22-.359
5	Super 199D	Lanova	I	EC	6-4x4	D	4	302		73-2000	57-1800	15.50		83	21.2	228-1200	1210		I	1.38-.344
6	Super 166D	Lanova	I	TC	4-3½x3¾	W	4	144		31-2000	24.5-1800	15.50	480	85	21.5		527		VI	1.25-.344
7	Super 177D	Lanova	I	TC	6-3½x3¾	W	4	216		42-2000	38.5-1800	15.50	480	80	17.4		668		VI	1.25-.344
8	Super 188D	Lanova	I	TC	6-3¾x4	W	4	265		54-2000	48-1800	15.50	480	88	15.3	205-1250	735		VI	1.38-.344
9	Super 199D	Lanova	I	TC	6-4x4	D	4	302		66-2000	57-1800	15.50	480	86	15.2	228-1200	985		VI	1.38-.344
10	Super 55D	Lanova	Tr	EC	4-3½x3¾	W	4	144		37-2000	31.5-2000	15.50		87	16.4	106-1500	516		VI	1.25-.360
11	Super 66D	Lanova	Tr	EC	4-3½x3¾	W	4	144		37-2000	31.5-2000	15.50		87	16.1	106-1500	508		VI	1.25-.360
12	Super 77D	Lanova	Tr	EC	6-3½x3¾	W	4	216		48-1600	40.8-1600	15.50		94	15.9	168-1200	652		VI	1.25-.313
13	Super 88D	Lanova	Tr	EC	6-3¾x4	W	4	265		58.5-1600	49.7-1600	15.50		93	14.5	203-1200	720		VI	1.38-.344
14	Onan DSP		I	PC	1-3½x3½	N	4	33.7		5.79-2000	5.5-1800	17.30		66	67.3	14.7-1800	370		I	1.31-.265
15	DRP		I	PC	2-3½x3½	N	4	67.3		14.8-2400	11-1800	17.30		77	49.4	34.2-2100	543		I	1.31-.265
16	P&H 287C-18A		T,B,Tr,M,R,I	DI	2-4½x5½	W	2	174	95-1800	82-1800	68-1800	16.00	1200	73	14.8¼	270-1200	975	1635	VI	No Valves
17	387C-18A		T,B,Tr,M,R,I	DI	3-4½x5½	W	2	261	144-1800	128-1800	103-1800	16.00	1200	75	11.6¼	425-1300	1190	2120	VI	No Valves
18	487C-18A		T,B,Tr,M,R,I	DI	4-4½x5½	W	2	348	200-1800	180-1800	144-1800	16.00	1200	80	10.4¼	600-1350	1500	2530	VI	No Valves
19	687C-18A		T,B,Tr,M,R,I	DI	6-4½x5½	W	2	522	280-1800	255-1800	205-1800	16.00	1200	75	8.9¼	825-1300	1820	3000	VI	No Valves
20	Packard 2D850		M,I	PC	6-5¼x6¼	W	4	852			300-2000	15.40	1000	142	7.3¼		2195	2770	V4	1.67-.460
21	1D1700		M,I	PC	12-5¼x6¼	W	4	1704			600-2000	15.40	1000	142	5.5¼		3300	3900	V4	1.67-.460
22	1D1135		M,I	PC	8-5¼x6¼	W	4	1136			400-2000	15.40	1000	142	6.7¼		2700	3380	V4	1.67-.460
23	1D2270		M,I	PC	16-5¼x6¼	W	4	2272			800-2000	15.40	1000	142	5.6¼		4660	5350	V4	1.67-.460
24	Red Wing D4-45	Wau	M	TC	4-3½x3¾	W	4	144	45-2400	40-2100	32-2000	17.00	850	88	45.6	90-1400		1460	VI	1.25-.312
25	DO		M	TC	4-4¼x4½	D	4	255	79-2600	75-2400	56-1600	15.00	750	91	33.9	182-1400		1900	VI	1.62-.375
26	D6-160		M	TC	6-5¼x6	W	4	779	168-2000	138-2000	102-1400	17.50	750	80	42.2	600-1000		4310	VI	2.25-.500
27	D6-200		M	TC	6-6¼x6½	W	4	1197	225-1600	185-1600	152-1300	16.50	750	83	42.2	845-1000		4310	VI	2.37-.656
28	Scripps 7000-1, 2, 3		M	TC	4-4¼x4½	D	4	255	79-2600	68-2600	53-1800	15.00	750	91	23.6	185-1400		1485	VI	2.37-.728
29	8500-1, 2, 3		M	TC	6-3¾x4½	D	4	298	84-2600	71-2600	59-1800	15.00	750	88	25.2	208-1500		1485	VI	1.62-.375
30	Sheppard 13		Tr,M,I	PC	2-4¼x5	W	4	142	33-2000	25-1800	22-1800	22.0	625	68	47.7¼	106-1200	1050	1500	VI	1.37-.313
31	6		Tr,M,I	PC	3-4¼x5	W	4	213	50-2000	38-1800	34-1800	22.0	625	69	38.9¼	161-1200	1325	1750	VI	1.37-.313
32	17		Tr,M,R,I	PC	2-3½x4	N		76.8	20-2000	15-1800	13.5-1800	22.0	650	55	32.5¼	50-1400	500	500	VI	1.09-.209
33	16		Tr,M,I	PC	4-4¼x5	W	4	319	73.5-1800	56-1800	51.5-1800	22.0		71	29.0	190-1075	1500		VI	1.56-....
34	Sterling VD6		M,R,I	DI	6-8x9	W	4	2714		330-1200	325-1200	14.00	1000	80	28.2¼	1685-1000	9160	8850	VI	2.37-.728
35	VDS6S		M,R,I	DI	6-8x9	W	4	2714	750-1200†	660-1200	563-1200	11.35	1340	137	17.4¼		9775	12770	VI	2.37-.728
36	VDS8S		M,R,I	DI	8-8x9	W	4	3619	1000-1200†	850-1200	750-1200	11.35	1340	137	16.2¼	3310-1000	12100	17000	VI	2.37-.728
37	Superior (6)40		M,I	DI	6-8½x10½	W	4	3575			325-900	12.20	800	80	44.5¼		14500	16000	VI	3.12-.875
38	40X		M,I	DI	6-8½x10½	W	4	3575			490-900	12.20	900	120	31.8¼		15500	17000	VI	3.12-.775
39	40L		R	DI	6-8½x10½	W	4	3575			375-1100	12.00	800	76	50.6		19000		V4	3.06-.697
40	40LX		R	DI	6-8½x10½	W	4	3575			500-1100	12.00	860	102	46.0		23000		V4	3.06-.620
41	40ALX		R	DI	6-8½x10½	W	4	3575			675-1100	12.00	1200	136	34.1		23000		V4	3.06-.620
42	40C-LX-6				6-8½x10½	W	4	3575			675-1100			136	22.4		15100		VI	3.63-....
43	40C-LX-8		M,R,I	DI	8-....	W	4	4767			900-1100			136	20.5		18410		VI	3.63-....
44	Waukesha 180-DLC		T,Tr,I	TC	4-3½x3¾	W	4	144	45-2400	32-2200	28-2000	17.00	750	71	18.3	102-1800	475		VI	1.25-.312
45	185-DLC		T,Tr,I	TC	4-3½x3¾	W	4	216	60-2400	54-2100	44-2000	17.00	750	69	18.1	152-1000	800		VI	1.25-.312
46	190-DLCA		T,Tr,I	TC	6-3¾x4	W	4	265	84-2800	64-2200	46-2000	17.00	750	69	18.9	191-1400	868		VI	1.37-.349
47	195-DLCA		T,Tr,I	TC	6-4x4	D	4	302	98-2800	83-2200	62-2000	17.00	750	81	15.6	221-1800	985		VI	1.56-.344
48	135-DKB		T,B,Tr	TC	6-4¼x5	D	4	426	147-2800	104-2000	85-1800	17.50	750	98	16.3	328-1600	1386		VI	-.456
49	*135-DKBS		T,B,Tr	TC	6-4¼x5	D	4	426	185-2800			17.50	750			400-1800	1486		VI	1.75-.456
50	148-DKB		T,B	TC	6-5¼x6	W	4	779	200-2150	180-2100	147-1800	17.50	750	79	16.4	584-1000	2320		VI	2.25-.477
51	*148-DKBS		T,B	TC	6-5¼x6	W	4	779	280-2100			17.50	750			706-1800	2445		VI	2.25-.477
52	WAKDB		T,I	TC	6-6¼x6½	W	4	1197	224-1600	191-1800	167-1600	16.50	750	99	22.8	840-1000	3800		VI	2.37-.656
53	*WAKDBS		T,I	TC	6-6¼x6½	W	4	1197	352-1800	296-1800	244-1600	16.50	750	101	16.1	1062-1600	3925		VI	2.37-.656
54	NKDB		I	TC	6-7x8¼	W	4	1905	297-1200	267-1200	215-1050	17.00	750	76	43.6	1383-600	9285		VI	2.87-.709
55	*NKDBS		I	TC	6-7x8¼	W	4	1905	390-1200	351-1200	312-1200	17.00	750	99	30.2	1730-1000	9435		VI	2.87-.709
56	LRDB		I	TC	6-8½x8½	W	4	2891	415-1200	374-1200	300-1000	15.00	750	77	34.3	2160-600	10300		VI	3.25-.704
57	*LRDBS		I	TC	6-8½x8½	W	4	2894	570-1200	513-1200	388-1000	15.00	750	100	28.9	2545-1000	10450		VI	3.25-.704
58	VLRDB		I	TC	12-8½x8½	W	4	5788	830-1200	797-1200	797-1200	17.00		92	19.5	4330-600	15500		VI	3.25-....
59	*VLRDBS		I	TC	12-8½x8½	W	4	5788	1135-1200	1091-1200	1091-1200	17.00		80	14.9	5070-900	16300		VI	3.25-....
60	Witte AD		I	PC	1-3¼x4½	W	4	37.3	4.8-1200	4.12-1200	3.75-1200	18.00	700	71	211	21-1200	798		VI	1.31-.320
61	BD		I	PC	1-4¼x6	W	4	85.1	10-900	8.5-900	7.75-900	16.50	700	82	173	58-900	1320		VI	1.56-.406
62	CD		I	PC	1-5x8	W	4	157	15.5-750	13.75-750	12.5-750	16.70	700	84	149	109-750	1860		VI	2.13-.531

ABBREVIATIONS

■—Without fan or muffler.
♣—Based on automotive or industrial weight.
•—Supercharged.
●—Bottom of gear box to top of heat exchanger.
‡—Including base.
♦—Includes radiator.
*—146-2000 for buses.
†—With all accessories.
▼—Includes reverse and reduction gear.
‡‡—Bottom of base to highest point on engine.
^—Modified.
^—Dual fuel engine; diesel oil or natural gas.
°—Also available in reduction gear models.
°°—Also available in right hand rotation.
††—Air cooled.
(2)—Fan to flywheel housing.
(4)—To engine center line.
(5)—All models are available with governed speed of 1400 RPM.
(6)—All engines also built in 8-cyl. models.
(11)—Includes radiator.
(12)—From bottom of pan to air cleaner mounting flange.
(15)—Including radiator and gear box.
A—Air.
AA—Aluminum Alloy.
AB—American Bosch.
AC—AC Spark Plug Co.
ACB—AC or Bosch.
Ach—Air chamber.
A-E—American Bosch or Ex-Cell-O Corp.
AEG—Air, electric or auxiliary gasoline engine.
A-El Air or Electric.
AF—Aluminum forging.
Al—Auto-Lite (electric), Ingersoll-Rand (air).
AL—Electric Auto-Lite Co.
Alu—Aluminum.
AM—Air-Maze Corp.
AR—Airtex.
A-R—American Bosch or Roosa Master.
AS—Air-swirl, direct injection.
AT—Arma Steel, tin plated.
B—Buses.
BB—Bendix or Bosch.
B-D—Bosch or Democ.
BFC—Bosch, Fram and Cuno.
B-N—Bosch or Nugent.
B-P—Bosch or Purolator.
BR—Bosch or Roosa-Master
BS—Bosch or Scintilla.
Bur—Burgess.
C—Closed.
Cb—Commercial and Bosch.
CB—Cuno and Bosch.
CBR—C.A.V., Bosch or Roosa.
C-F—Cuno and Fram.
CI—Cast Iron.
CMS—Chrome moly steel.
CNM—Chrome-nickel molybdenum.
Com—Commercial Filters Corp.
Cont—Continental Motors Corp.
Cun—Cuno Engineering Corp.
D—Dry liners used.
DA—Delco-Remy and Auto-Lite.
DeL—DeLuxe Products Corp.
Dem—Democ.
DFS—Drop forged steel.

For Directory of the Engine Manufacturers listed above, see page 286

ENGINES—*concluded*

VALVES		PISTON				PISTON PIN		CONNECTING RODS			MAIN BEARINGS		INJECTION SYSTEM							START-ING METHOD		OVERALL DIMENSIONS				
Exhaust Port Diameter and Lift (In.)	Material	Length (In.)	Weight with Rings and Pin (Lb.)	No. of Compression Rings	No. of Oil Rings	Diameter and Length (In.)	Locked in—	Materials (S. A. E. No.)	Center to Center Length (In.)	Weight with Cap and Bushing (Lb.)	Number	Diameter (In.)	Make of Pump	Make of Valve	Valve Type—Open or Closed	Orifices	Pressure—Nozzle Opening (Lb. per Sq. In.)	Air Cleaner—Make	Fuel Filter—Make	Make	Type	Length—Fan to Flywheel (In.)	Width (In.)	Height—To Top of Air Cleaner (In.)	Clutch Housing (S.A.E. Numbers)	Line Number
1.17- .342	AA	4.44		3	1	1.25-3.44	F	1045	6.75	3.75	4	2.63	AB	AB	C	Pi	1750Don	Fra	DR	Ele	43 1/8	21 1/4	30		1
.935- .281	CI	4.19	3.80	3	1	1.25-2.75	F	1045	6.75	2.00	3	2.25	AB	AB	C	Pi	1750Don	Fra	DR	Ele	30 7/8	19	40		2
.935- .281	CI	4.19	3.80	3	1	1.25-2.75	F	1045	6.75	2.00	4	2.25	AB	AB	C	Pi	1750Don	Fra	DR	Ele	40	22	41		3
1.03- .362	CI	4.19	4.50	3	1	1.25-2.75	F	1045	6.75	2.56	4	2.63	AB	AB	C	Pi	1750Don	Fra	DR	Ele	41 1/2	22	41		4
1.17- .342	AA	4.44	6.00	3	1	1.25-3.44	F	1045	6.75	3.75	4	2.63	AB	AB	C	Pi	1750Don	Fra	DR	Ele	42 1/8	22	42 1/8	3	5
1.00- .344	AA	3.75	2.25	3	1	1.25-2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750Don	Fra	DR	Ele	30 3/8	19	28 1/8		6
1.00- .344	AA	3.75	3.25	3	1	1.25-2.75	F	1045	6.75	2.69	4	2.25	AB	AB	C	Pi	1750Don	Fra	DR	Ele	39 1/8	22	29 1/8		7
1.18- .344	AA	4.19	5.44	3	1	1.25-3.00	F	1045	6.75	2.94	4	2.63	AB	AB	C	Pi	1750Don	Fra	DR	Ele	41 1/2	22	29 1/2		8
1.18- .344	AA	4.44		3	1	1.25-3.44	F	1045	6.75	3.75	4	2.63	AB	AB	C	Pi	1750Don	Fra	DR	Ele	43 3/8	22	30 1/2		9
1.13- .360	AA	3.75	2.25	3	1	1.25-2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750Don	F-A	DR	Ele	30 7/8	18 1/2	32 1/4		10
1.13- .360	AA	3.75	2.25	3	1	1.25-2.75	F	1045	6.75	2.69	3	2.25	AB	AB	C	Pi	1750Don	F-A	DR	Ele	30 7/8	18 1/2	30 1/2		11
1.13- .281	AA	3.75	2.25	3	1	1.25-2.75	F	1045	6.75	2.69	4	2.25	AB	AB	C	Pi	1750Don	F-A	DR	Ele	39 7/8	18 1/2	31 1/4		12
1.26- .344	AA	4.19		3	1	1.25-3.00	F	1045	6.75	2.94	4	2.63	AB	AB	C	Pi	1750Don	F-A	DR	Ele	41 1/2	18 1/2	33 3/4		13
1.22- .265	Van	4.13	2.25	3	2	1.25-3.25	F	1040	6.13	2.61	2	2.75	Dem	Dem	C	Pi	2250Don	Fra	Own	Ha	22 5/8	21 3/4	31 7/8		14
1.22- .265	Van	4.13	2.25	3	2	1.25-3.25	F	1040	6.13	2.61	2	2.75	Dem	Dem	C	Pi	2500Don	Fra	AL	Ele	23	30 1/4	27		15
2.30- .550	AA	6.35	7.13	4	2	1.75-3.88	F	1141	11.88	7.88	3	4.00	BB	B-D	C	Si	2200D-M	Ff	AI	A-EI	34 1/4	28 1/4	40 7/8	1	16
2.30- .550	AA	6.35	7.13	4	2	1.75-3.88	F	1141	11.88	7.88	4	4.00	BB	B-D	C	Si	2200D-M	Ff	AI	A-EI	43 7/8	28 1/4	42 1/8	1	17
2.30- .550	AA	6.35	7.13	4	2	1.75-3.88	F	1141	11.88	7.88	5	4.00	BB	B-D	C	Si	2200D-M	Ff	AI	A-EI	45 5/8	28 1/4	42 1/8	1	18
2.30- .550	AA	6.35	7.13	4	2	1.75-3.88	F	1141	11.88	7.88	7	4.00	BB	B-D	C	Si	2200D-M	Ff	AI	A-EI	59 7/8	28 1/4	42 1/8	1	19
1.42- .460	AF	5.47	8.26	3	2	1.75-4.63	F	4340	11.25	11.81	7	4.00	AB	AB	C	Pi	1675A'M	Fra	LN	Ele	75	35 3/8	51 1/2		20
1.42- .460	AF	5.47	8.26	3	2	1.75-4.63	F	4340	11.25	18.57	7	4.00	AB	AB	C	Pi	1675A'M	Pur	LN	A	85 1/16	41 3/8	54 1/8		21
1.67- .460	AF	5.47	8.26	3	2	1.75-4.63	F	4340	11.25	18.57	5	4.00	AB	AB	C	Pi	1675A'M	Pur	LN	A	75 11/16	41 3/8	54		22
1.67- .460	AF	5.47	8.26	3	2	1.75-4.63	F	4340	11.25	18.57	9	4.00	AB	AB	C	Pi	1675A'M	Fra	LN	A	121 1/16	41 3/8	57		23
1.00- .281	CI	4.75	3.28	3	2	1.25-2.75	F	1045	6.75	1.97	3	2.25	AB	AB	C	Pi	1800Opt	Opt	DR	Ele	42 7/8	24 3/8	29 3/8	2	24
1.12- .375	Alu	4.84	4.47	4	2	1.18-3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650	Pur	LN	Ele	50 3/8	28 3/4	35 3/8	2	25
1.81- .531	Alu	7.25		4	2	1.87-4.50	F	4145	11.75		7	4.25	AB	AB	C	Pi	2000Opt	Com	DR	Ele	74 5/8	32 3/8	47 3/8	0	26
2.00- .656	Alu			3	2	2.18-5.37	F	4145	13.25		7	4.75	AB	AB	C	Pi	2000Opt	Com	DR	Ele	88 1/8	34 7/8	51 11/16	0	27
1.12- .375	Alu	4.84	4.47	4	2	1.18-3.70	F	CNM	8.00	5.31	5	3.00	AB	AB	C	Pi	1650AC	Pur	DR	Ele	46 5/8	24 1/4	32 1/4	4	28
1.12- .375	Alu	4.84	3.56	4	2	1.18-3.20	F	CNM	8.00	5.31	7	3.00	AB	AB	C	Pi	1650AC	Pur	DR	Ele	53 1/16	24 1/4	32 1/4	4	29
1.37- .313	CI	5.93	6.20	3	2	1.50-4.00	F	Fg	10.87	6.60	3	2.75	Sp	Sp	O	Si	3AM	Fra	AL	Opt	30	33	38	3	30
1.37- .313	CI	5.31	6.20	3	2	1.50-4.00	F	Fg	10.87	6.60	4	2.75	Sp	Sp	O	Si	3AM	Fra	AL	Ele	35	23	38	3	31
1.09- .209	CI	3.81	2.26	3	2	1.06-2.93	F	Fg	8.00	1.65	3	2.00	Sp	Sp	O	Si	3AM	Fra	AL	E-H	22 1/2	22	29	5	32
1.56-	CI	5.48		3	2	1.50-3.75	F	Fg	10.88		5	3.19	Own	Own	O	Si	3AM	Fra	AL	Ele	40 11/16	20 11/16	38 1/16		33
2.37- .728	Alu	10.25	30.59	4	2	3.00-6.93	F	4340	18.00	46.05	7	6.00	BB	BB	C	Mu	3000Opt	Cun	LN	A-EI				00	34
2.37- .728	AA	9.62	26.25	4	1	3.00-6.93	F	4340	18.00	46.05	7	6.00	AB	AB	C	Mu	3300A'M	Cun	LN	Ele	114 1/4	39 1/4	64	00	35
2.37- .728	AA	9.62	26.25	4	1	3.00-6.93	F	4340	18.00	46.05	9	6.00	AB	AB	C	Mu	3300A'M	Cun	LN	Ele	134 1/2	39 1/4	64	00	36
3.12- .875	CI	13.69	86.20	4	3	3.50-7.00	F	1045	21.00	75.00	7	6.00	B-D	B-D	C	Mu	2500A'M	Pur	Own	A	112	40	70		37
3.12- .775	CI	13.69	86.20	4	3	3.50-7.00	F	1045	21.00	75.00	7	6.00	B-D	B-D	C	Mu	3000A'M	Pur	Own	A	148	48	70		38
3.06- .697	CI	11.72	73.10	4	3	3.50-7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3000A'M	Pur	Opt	Ele	129	56	74		39
3.06- .620	CI	11.72	73.10	4	3	3.50-7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3500A'M	Pur	Opt	Ele	148	56	74		40
3.06- .620	CI	11.72	73.10	4	3	3.50-7.00	F	1045	21.00	67.10	7	6.00	BB	BB	C	Mu	3500A'M	Pur	Opt	Ele	148	56	74		41
3.38-	CI	12.30		4	2	3.50-3.50	F				6	5.75	BB				AM	Pur	Own	A	154 7/16	57	89 1/4		42
3.38-	CI	12.30		4	2	3.50-3.50	F				8	5.75	BB				AM	Pur	Own	A	186 11/16	59 1/16	83 11/16		43
1.00- .281	AA	4.75		3	2	1.25-2.75	F	1015	6.75		3	2.25	AB	AB	C	Pi	1800Opt	Opt	Opt	Ele	30 7/8	19	27 5/8	4	44
1.00- .281	AA	4.18		3	2	1.25-2.75	F	1045	6.75		4	2.25	AB	AB	C	Pi	1800Opt	Opt	Opt	Ele	40 3/4	22	29	3	45
1.12- .349	AA	4.18		3	2	1.25-3.00	F	1045	6.75		4	2.63	AB	AB	C	Pi	1500Opt	Opt	Opt	Ele	42 5/8	22	29	3	46
1.37- .344	AA	4.43		3	2	1.25-3.43	F	1045	6.75		4	2.63	AB	AB	C	Pi	1500Opt	Opt	Opt	Ele	43	25 3/4	30	3	47
1.50- .375	AA	4.94		3	1	1.50-3.62	F	1045	9.50		7	3.25	AB	AB	C	Pi	1800Opt	Opt	Opt	Ele	47 5/8	26	34 1/2	3	48
1.50- .375	AA	4.94		3	1	1.50-3.62	F	1045	9.50		7	3.25	AB	AB	C	Pi	1800Opt	Opt	Opt	Ele	47 5/8	26	41 1/2	3	49
1.81- .507	AA	7.25		4	2	1.87-4.50	F	4145	11.75		7	4.50	AB	AB	C	Pi	2000Opt	Opt	DRW	E-G	55 1/8	28 1/2	47 1/2	0,1	50
1.81- .507	AA	7.25		4	2	1.87-4.50	F	4145	11.75		7	4.50	AB	AB	C	Pi	2000Opt	Opt	DRW	E-G	55 1/8	28 1/2	50 3/4	0,1	51
2.00- .656	AA	8.37		4	2	2.18-5.37	F	4145	13.25		7	4.75	AB	AB	C	Pi	2000Opt	Opt	DRW	E-G	66 5/8	33	50 7/8	0	52
2.00- .656	AA	8.37		4	2	2.18-5.37	F	4145	13.25		7	4.75	AB	AB	C	Pi	2000Opt	Opt	DRW	E-G	66 5/8	33	62 1/2	0	53
2.50- .709	AA	9.75		4	2	2.50-6.03	F	4145	15.38		7	5.25	AB	AB	C	Pi	2000Opt	Opt	Own	G	78 7/8	48	60 1/4	00	54
2.50- .709	AA	9.75		4	2	2.50-6.03	F	4145	15.38		7	5.25	AB	AB	C	Pi	2000Opt	Opt	Own	G	78 7/8	48	60 1/4	00	55
2.75- .704	AA	11.31		4	1	3.00-7.00	F	4145	21.38		7	5.50	AB	AB	C	Pi	2000Opt	Opt	Own	G	97 1/2	49 1/4	69 5/8	00	56
2.75- .704	AA	11.34		4	2	3.00-7.00	F	4145	21.38		7	5.50	AB	AB	C	Pi	2000Opt	Opt	Own	G	113 1/2	49 1/4	69 5/8	0	57
2.75-	AA			4	2	3.00-7.00	F	4145	18.00		7	6.25	AB			Pi			Own	G	130	67	75 1/2		58
2.75-	AA			4	2	3.00-7.00	F	4145	18.00		7	6.25	AB			Pi			Own	G	130	67	75 1/2		59
1.19- .320	AA	4.44	2.25	4	1	1.25-2.72	F	1045	8.50	3.23	2	TR	AB	AB	C	Pi	1900Uni	AR	AL	E-H	30 5/8	23 3/4	36		60
1.56- .406	CI	7.31	9.15	4	1	1.75-3.50	F	1045	15.00	8.80	2	TR	AB	AB	C	Pi	1600Uni	AR	AL	E-H	45 1/4	38 3/8	41 1/2		61
1.88- .531	CI	8.19	14.73	4	2	1.81-4.22	F	1045	18.00	16.73	2	TR	AB	AB	C	Pi	1900Uni	AR	AL	E-H	53 1/16	46 7/16	48 11/16		62

DI—Direct injection.
D-M—Donaldson or Air Maze.
D-N—Delco-Remy or Novo.
Don—Donaldson Co.
DR—Delco-Remy Div.
DRW—Delco or Waukesha.
EAH—Air, Electric, or Hand.
EC—Energy cell.
E-G—Electric or auxiliary gasoline engine.
E-H—Electric or hand.
Ele—Electric.
F—Floating
F-A—Fram or American Bosch
FB—Fram or Bosch.
Ff—Fulflo.
Fg—Forging.
Fra—Fram Corp.
G—Auxiliary gasoline engine.
GS—Gasoline and spark ignition.
Ha—Hand.
Hes—Hesselman.
I—Industrial.
HI—Horizontally In-head.
LB—Leece Neville or Buda.
L-D—Leece Neville or Delco Remy.
LDA—Leece-Neville, Delco-Remy or Autolite.
LDI—Leece-Neville, Delco-Remy or Ingersoll Rand.
LN—Leece Neville Co.
Lyn—Lynite.
M—Marine.
Man—Mann.
Mic—Michiana Products Corp.
MW—Marine Work Boat.
N—No or None.
Mu—Multiple.
O—Open.
O-D—Own or Delco-Remy.
Opt—Optional
PC—Precombustion chamber.
Pi—Pintle.
P-L—Purolator or Luberfiner.
P-S—Purolator or Stewart-Warner.
Pur—Purolator Products, Inc.
R—Railears.
RM—Roosa-Master.
s—Shaft horsepower.
Sc—Scintilla Magneto Div.
SC—Swirl chamber.
Sh—Shaft torque; Shaft RPM.
Si—Single.
Sp—Sheppard.
T—Trucks.
TC—Turbulence chamber.
Tr—Tractors.
TR—Tapered roller bearings.
Uni—United Air Cleaner Div.
VI—Vertically In-Head.
V2—Vertically in head, 2 inlets used.
V4—Vertically in-head, 2 exhaust and 2 intake valves per cylinder.
Van—Vanasil.
Vor—Vortex.
Vwg—Varies with gear.
W—Wet liners used.
Wau—Waukesha.
W-L—WGB Oil Clarifier or Luberfiner.
WP—Winslow or Purolator.
Win—Winslow Filter.
WIP—Wix or Purolator.
ZFB—Zenith, Fram or Bosch.

For Directory of the Engine Manufacturers listed above, see page 286

1956 U.S. OUTBOARD MOTORS

MAKE AND MODEL	Power Head	Number of Cylinders	Cylinder Material	Bore and Stroke (In.)	Piston Displacement (Cu. In.)	Engine Type	Brake Hp. at R.P.M. O.B.C. Rating	Engine Weight (Lb.) Fully Equipped	Piston Rings—Number and Width	Propeller: Diameter (In.)	Propeller: Pitch	Propeller: Right or Left Hand Rotation	Propeller: Number of Blades	Starting Device	Fuel Tank Capacity (Pts.)	Gear: Ratio	Gear: Tooth Pitch	Gear: Material (S.A.E. No.)	Gearcase Bearing	Magneto Make	Carburetor: Make	Carburetor: Size (In.)	Carburetor: Starting Mixture Obtained by—	Spark Plug Make and Model	Bearings: Main	Bearings: Connecting Rod	Cooling System	Reverse	Lubrication—Pints Oil to 1 Gal. Gasoline
Buccaneer 3D13B	Reed	1	ACS	2½x1½	5.32	S	3.0-4000	38	2-3/16	6¾	6⅞	L	2	RR	7.2	13-22	13.56	4615	PI	Own	Own	¾	Pr	(a)	PI	PI	Pp	No	
5512B	Reed	2	ACS	1½x1½	8.84	AF	5.0-4000	45	3-3/16	7½	7⅛	L	2	RR	6.4	13-20	10.38	4615	PI	Own	Own	¾	Pr	(a)	PI	PI	Pp	No	
5012B	Reed	2	ACS	1½x1½	8.84	AF	5.0-4000	52	3-3/16	8	7¼	R	2	RR	7.2	15-28	12.39	4615	PI	Own	Own	.569	C	(a)	PI	PI	Cen	Yes	
12D13B	Reed	2	ACS	2¼x2¼	17.89	AF	12.0-4000	75§	3-3/16	9	11	R	3	RR	48‡	12-21	8.97	4615	PI	Own	Own	.684	C	(a)	PI	PI	Cen	Yes	
12DE13B	Reed	2	ACS	2¼x2¼	17.89	AF	12.0-4000	86§	3-3/16	9	11	R	3	Ele	48‡	12-21	8.97	4615	PI	Own	Own	.684	C	(a)	PI	PI	Cen	Yes	
22D11B	Reed	2	ACS	2½x2¾	35.70	AF	25.0-4000	119§	3-3/16	10¾	12½	R	3	RR	48‡	12-21	7.50	46.5	A	Own	Own	1.08	C	(a)	A	A	Cen	Yes	
22DE11B	Reed	2	ACS	2½x2¾	35.70	AF	25.0-4000	129§	3-3/16	10⅝	12½	R	3	Ele	48‡	12-21	7.50	46.5	A	Own	Own	.....	C	(a)	A	A	Cen	Yes	
Champion 2N Guide Four*		1	.....	2⅛x1¾	5.84	S	4.2-4300	42	.....	7½	6	.....	2	RR	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-7	.....	.....	.....	No	½
3N-S Guide Six*		2	.....	1⅝x1¾	9.66	AF	6.0-4300	46	.....	7½	9	.....	2	RR	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-J7J	.....	.....	.....	Yes	½
4N-D Deluxe		2	.....	1⅝x1¾	9.66	AF	7.8-4300	46•	.....	7½	9½	.....	2	RR	28‡•	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-J7J	.....	.....	.....	Yes	½
6N-D Deluxe		2	.....	2½x2⅛	19.94	AF	16.5-4300†	54	.....	8	11	.....	3	RR	48‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-J8J	.....	.....	.....	Yes	½
6N-MS Midship		2	.....	2½x2⅛	19.94	AF	16.5-4300†	54	.....	8	11	.....	3	RR	48‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-J8J	.....	.....	.....	Yes	½
6N-HR Hotrod		2	.....	2½x2⅛	19.94	AF	Class B	46	.....	7	13½	.....	2	Ro	16‡	.....	.....	.....	.....	.....	.....	.....	.....	.....	Ch-R7	.....	.....	.....	No	1
Elgin 571.58211	Re-2 Port	1	ACS	1⅝x1½	3.91	S	2.0-4000	28¾	3-3/16	6½	4	L	2	RR	5	14-21	12.00	4140	PI	Wico	Til	½	C	Ch-J11J	PI	PI	Air	No	½
571.59501	Re-2 Port	2	ACS	2x1½	10.60	AF	5.5-4000	54	3-3/16	7½	7	R	2	RR	36	14-23	12.00	4140	PI	Wico	Til	½	C	Ch-H10J	PA	A	VP	Yes	½
571.59701	Re-2 Port	2	ACS	2⅛x1½	11.97	AF	7.5-4000	54	3-3/16	8	8	R	2	RR	36‡	14-23	12.00	4140	PI	Wico	Til	½	C	Ch-H10J	PA	A	VP	Yes	½
571.58772	Re-2 Port	2	ACS	2⅛x1½	11.97	AF	7.5-4000	52	3-3/16	7½	8½	L	2	RR	11	14-21	12.00	4140	PI	Wico	Til	½	C	Ch-J11J	PA	A	VP	Yes	½
571.58902, 571.58912	Re-2 Port	2	ACS	2½x2	17.71	AF	12.0-4000	58	3-3/16	8½	8	R	3	RR	48‡	14-21	10.00	4140	PA	Wico	Til	¾	C	Ch-H10J	PA	PA	VP	Yes	½
571.59403, 571.59412	Re-2 Port	2	ACS	3x2.667	37.70	AF	2.5-4000	110	3-3/16	10¾	11½	R	3	ER	48‡	13-21	8.00	4140	A	FM	Til	1 1/16	C	Ch-H9J	A	PA	VP	Yes	½
571.59601, 571.59611	Re-2 Port	2	ACS	3x2.667	37.70	AF	2.5-4000	110	3-3/16	10⅝	11½	R	3	Ele	48‡	13-21	8.00	4140	A	FM	Til	1 1/16	C	Ch-H9J	A	PA	VP	Yes	½
Evinrude Lightwin 3018	Re-2 Port	2	ACS	1⅜x1⅝	5.28	AF	3.0-4000	32	2-3/16	6½	6¼	L	2	RR	5.6	17-28	15.66	4615	PI	Own	Own	.....	C	(a)	PI	PI	Cen	Yes	½
Ducktwin 3020	Re-2 Port	2	ACS	1⅜x1⅝	5.28	AF	3.0-4000	32	2-3/16	6½	6¼	L	2	RR	5.6	17-28	15.66	4615	PI	Own	Own	.....	C	(a)	PI	PI	Cen	Yes	½
Fisherman 5512	Re-2 Port	2	ACS	1½x1½	8.84	AF	5.5-4000	51	3-3/16	8	7¼	R	2	RR	36.0	15-26	12.39	4615	PI	Own	Own	.....	C	(a)	PI	PI	Cen	Yes	½
Fleetwin 7520	Re-2 Port	2	ACS	2⅛x1⅝	12.40	AF	7.5-4000	56	3-3/16	8	8½	R	2	RR	36.0	15-26	12.39	4615	PI	Own	Own	.....	C	(a)	PI	PI	Cen	Yes	½
Sportwin 10012	Re-2 Port	2	ACS	2⅝x1⅞	16.60	AF	10.0-4000	72	3-3/16	9	8	R	3	RR	48.0	15-26	11.11	4615	PI	Own	Own	.....	C	(a)	A	A	Cen	Yes	½
Fastwin 15016, 15916	Re-2 Port	2	ACS	2⅝x2⅛	19.94	AF	15.0-4000	75	3-3/16	9	11	R	3	RR*	48.0	12-21	8.97	4615	PI	Own	Own	.....	C	(a)	A	A	Cen	Yes	½
Bigtwin 25022, 25924	Re-2 Port	2	ACS	2½x2¾	35.70	AF	30.0-4500	113	3-3/16	10¾	12½	R	3	RR*	48.0	12-21	7.50	4615	A	Own	Own	1 1/16	C	(a)	A	A	Cen	Yes	½
Lark 25826	Re-2 Port	2	ACS	2½x2¾	35.70	AF	30.0-4500	130	3-3/16	10⅝	12½	R	3	Ele	48.0	12-21	7.50	4615	A	Own	Own	1 1/16	C	(a)	A	A	Cen	Yes	½
Fageol 44	Pop	4	CI	2½x2¼	44.00	AF	35.0-5200	175	4-(c)	10	11	R	3	Ele	.....	.....	8.00	4615	A	Mal	Zen	⅝	C	Ch-J6	PI	PI	Cen	Yes	.....
Flambeau 125520	3 Port	1	CI	1⅜x1⅛	4.62	S	2.50-4000	29	3-3/16	7	6	L	2	RR	6.0	13-24	12.00	1315	PI	Eis	Own	.....	C	Ch-J7J	PI	PI	RP	No	½
174050	3 Port	2	CI	1⅜x1⅛	9.24	AF	5.00-4000	35	3-3/16	8	8½	L	2	RR	6.0	13-24	12.00	1315	PI	Eis	Own	.....	C	Ch-J7J	PI	PI	RP	No	½
Johnson JW	Re-2 Port	2	ACS	1⅜x1⅝	5.28	AF	3.0-4000	32	2-3/16	6½	5¾	L	3	RR	5	17-28	15.66	4615	PI	Own	Own	⅝	C	Ch-J6J	PI	PI	.....	Yes	½
CD	Re-2 Port	2	ACS	1½x1½	8.84	AF	5.5-4000	47	3-3/16	8	7¼	R	2	RR	32‡	15-26	12.39	4615	PI	Own	Own	¾	C	Ch-J6J	PI	PI	VP	Yes	½
QD	Re-2 Port	2	ACS	2⅝x1⅞	16.60	AF	10.0-4000	70	3-3/16	9	8	R	3	RR	48‡	12-21	8.97	4615	PA	Own	Own	⅞	C	Ch-J6J	A	A	.....	Yes*	½
AD	Re-2 Port	2	ACS	2⅛x1⅝	12.40	AF	7.5-4000	56	3-3/16	8	8½	R	2	RR	36‡	15-26	12.39	4615	PI	Own	Own	⅝	C	(a)	PI	PI	VP	Yes	½
FD	Re-2 Port	2	ACS	2⅝x2¼	19.94	AF	15.0-4000	75	3-3/16	9	11	R	3	ER	48‡	12-21	8.97	46.5	PI	Own	Own	⅞	C	(a)	PA	A	VP	Yes	½
RD, RDE, RJE	Ck-2 Port	2	ACS	2½x2¾	35.70	AF	30.0-4500	(b)	3-3/16	10⅝	12½	R	3	ER	48‡	12-21	7.50	46.5	A	Own	Own	1½	C	(a)	A	A	VP	Yes	½
Lauson S353	Pop-2 Port	1	CI	2½x1⅞	6.65	S	3.0-4000	44	3-.....	7½	6	L	2	RR	5	12-22	.....	.....	PI	Wico	Til	.....	C	Ch-J8	A	PI	Air	No	No
T653	Pop-2 Port	2	CI	2½x1⅞	13.30	AF	6.0-4000	57	3-.....	7½	7½	L	2	RR	10	13-21	.....	.....	PI	Wico	Til	.....	C	Ch-J8	.....	.....	Air	No	No
T653N	Pop	2	CI	2½x1⅞	13.30	AF	6.0-4000	58	3-.....	7½	7½	L	2	RR	10	13-21	.....	.....	PI	Wico	Til	.....	C	Ch-J8	PI	PI	Air	Neu	No
Mercury** Mark 6		2	.....	1⅝x1½	7.20	AF	5.9-4500	42	.....	.....	.....	.....	.....	RR	26‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	No	.....
Mark 25		2	.....	2⅛x2½	19.80	AF	20.0-5400	75	.....	.....	.....	.....	.....	RR	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 25E		2	.....	2⅛x2½	19.80	AF	20.0-5400	85	.....	.....	.....	.....	.....	ER	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 30		4	.....	2⅛x2½	39.70	AF	30.0-5400	110	.....	.....	.....	.....	.....	RR	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 30E		4	.....	2⅛x2½	39.70	AF	30.0-5400	118	.....	.....	.....	.....	.....	ER	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 55		4	.....	2⅛x2½	39.60	AF	40.0-5400	111	.....	.....	.....	.....	.....	RR	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Mark 55E		4	.....	2⅛x2½	39.60	AF	40.0-5400	120	.....	.....	.....	.....	.....	ER	48‡	.....	.....	.....	.....	.....	Til	.....	.....	.....	.....	A	A	.....	Yes	.....
Neptune AA1	Re-2 Port	1	ACS	1⅞x1½	2.87	.....	1.7-4000	17	2-3/16	6	5	L	2	Go	2	13-20	14.00	.....	PI	Phe	Til	.....	Fl	Ch-J8J	PI	PI	Cp	Yes	½
Oliver K2	Re-2 Port	2	ACS	2½x2⅛	19.94	AF	15.0-4500	78	2-3/16	8¼	11	L	2	RR	52	12-21	10.00	8615	PA	Scin	Til	1	C	Ch-H8J	A	A	Fvr	Yes	½
J2	Re-2 Port	2	ACS	2x1½	9.42	AF	5.5-4500	90	2-3/16	7½	6	L	2	RR	28	13-21	10.00	8615	PA	Scin	Til	¾	C	Ch-J8J	PI	PI	Fvr	Yes	½
K2E	Re-2 Port	2	ACS	2½x2⅛	19.94	AF	15.0-4500	88	2-3/16	8¼	11	L	2	ER	52	12-21	10.00	8615	PA	Scin	Til	1	C	Ch-H8J	A	A	Fvr	Yes	½

Scott-Atwater††	3065	Re-2 Port	1	ACS	2½x1⅝	6.23	S	3.6-4000	39	2-1/8	7½	6	R	2	RR	8	13-21	12.56	8640	PA	Phe	Tll	⅜	C	Ch-H10J	Pl	PA	RP	No	½
	3765	Re-2 Port	2	ACS	1½x1½	7.48	AF	5.0-4200	45	2-⅛	7½	6	L	2	RR	26‡	13-21	10.75	8640	PA	Wico	Tll	⅜	C	Ch-H10J	PA	PA	Fvr	Yes▾	½
	3365	Re-2 Port	2	ACS	2x1⅝	11.00	AF	7.5-4200	49	2-⅛	9	7	L	2	RR	48‡	13-21	10.75	8640	PA	Phe	Tll	⅜	C	Ch-H10J	Pl	PA	Fvr	Yes▾	½
	3865	Re-2 Port	2	ACS	2½x2	14.82	AF	10.0-4200	58	3-⅛	7⅞	9½	L	2	RR	48‡	13-21	10.75	8640	PA	Wico	Tll	⅜	C	Ch-H10J	PA	PA	Fvr	Yes▾	½
	3965	Re-2 Port	2	ACS	2½x2⅛	19.95	AF	16.0-4200	75	3-⅛	9	9	L	2	RR	48‡	15-23	9.25	8640	A	Wico	Tll	1	C	Ch-5MJ	A	PA	Fvr	Yes▾	½
	3665	Reed	2	ACS	3½x2¾	42.18	AF	34.3-4200	130	3-⅛	10	14	L	2	ER	48‡	13-22	8.00	8640	A	Phe	Tll	1⅛	C	Ch-H10J	A	A	VP	Yes	½
West Bend	16021	Re-2 Port	1	ACS	1⅝x1⅝	3.91	S	2.0-4000	28¾	3-⅛	6½	4	L	2	RR	8	14-21	12.00	4140	PI	Wico	Tll	½	C	Ch-J11J	PI	PI	Air	No	½
	16050	Re-2 Port	2	ACS	2x1⅛	10.60	AF	5.5-4000	54	3-⅛	7½	7	R	2	RR	38	14-23	12.00	4140	PI	Wico	Tll	½	C	Ch-H10J	PA	A	VP	Yes	½
	16070	Re-2 Port	2	ACS	2¼x1⅛	11.97	AF	7.5-4000	54	3-⅛	8	8	R	2	RR	38‡	14-23	12.00	4140	PI	Wico	Tll	⅝	C	Ch-H10J	PA	A	VP	Yes	½
	16090, 16091	Re-2 Port	2	ACS	2½x2	17.71	AF	12.0-4000	58	3-⅛	8½	8	R	3	RR	48‡	14-21	10.00	4140	PA	Wico	Tll	⅝	C	Ch-H10J	A	A	VP	Yes	½
	16090+D, 160941, 160960	Re-2 Port	2	ACS	3x2.667	37.70	AF	25.0-4000	110	3-⅛	10⅝	11½	R	3	ER	48‡	13-21	8.00	4140	A	FM	Tll	⅞	C	Ch-H9J	A	PA	VP	Yes	½
	160961	Re-2 Port	2	ACS	3x2.667	37.70	AF	25.0-4000	110	3-⅛	10⅝	11½	R	3	Ele	48‡	13-21	8.00	4140	A	FM	Tll	⅞	C	Ch-H9J	A	PA	VP	Yes	½

ABBREVIATIONS

*—Similar models produced under trade names of Majestic and Voyager.
†—Majestic and Voyager, 15.0-4300.
▲—Majestic and Voyager, 46.
■—Majestic and Voyager, 47.
●—Majestic and Voyager, 10.
♦—Majestic, 10; Voyager, 12.
‡—Separate gas tank.
▾—Includes neutral.
§—Not including separate fuel tank.
°—Electric on 15918 and 25924.
□—Electric starter on 571.59601.
**—Material secured from manufacturer's brochure.
††—Similar models produced under trade names of Corsair and Firestone and Hiawatha.
(a)—Champion J6J or AutoLite A3X.
(b)—112 for RD, 126 for RDE, 128 for RJE.
(c)—Compression, ⅛", oil, ⅛".
A—Antifriction.
ACS—Aluminum with cast iron sleeves.
AF—Alternate firing.
C—Choke.
Cen—Centrifugal.
Ch—Champion Spark Plug Co.
CI—Cast iron.
Ck—Check valve.
Co—Cord.
Cp—Cam pump.
Ele—Eiseman (Jack & Heintz Precision Ind.).
Ele—Electric.
ER—Electric and rewinding rope.
Fl—Flooding.
FM—Fairbanks Morse & Co.
Fvr—Flexible vane rotor.
L—Left.
Mal—Mallory.
Neu—Neutral.
PA—Plain and antifriction.
Phe—R. E. Phelon Co.
Pl—Plain.
Pop—Poppet valve.
Pp—Plunger pump.
Pr—Primer.
R—Right.
Re—Reed valve.
Ro—Rope.
RP—Rotary pump.
RR—Rewinding rope.
S—Single.
Scin—Scintilla Magneto Div.
Tll—Tillotsen Mfg. Co.
VP—Vane pump.
Wico—Wico Electric Co.
Zen—Zenith.

Diesel Engines For Use In Diesel-Electric Locomotives

ENGINE MAKE AND MODEL	Cylinder Arrangement	Cycle	No. of Cylinders, Bore and Stroke (In.)	Displacement (Cu. In.)	Compression Ratio	Maximum Brake HP at Specified RPM	Continuous HP at Specified RPM	Supercharger Used	Weight (Lb.)	OVERALL DIMENSIONS (In.) Length	Width	Height
Alco 251	I	4	6-9x10½	4008	13.00	975–1000	900–1000	Yes	22100	135⅛	58¾	87¼
251	V	4	12-9x10½	8016	13.00	1950–2000	1800–1000	Yes	32650	157⅝	70½	93⅞
251	V	4	16-9x10½	10688	13.00	2600–2800	2400–1000	Yes	42000	197⅞	70½	99¾
539	I	4	6-12½x13	9572	12.50	1000–1200	900–740	Yes	34800	191	57½	97
539	I	4	6-12½x13	9672	11.60	860–1200	800–740	No	33200	167	57½	97
Baldwin 606A	I	4	6-12¾x15½	11880	13.45	1315–625	†1200–625	Yes	43700	206½	68½	97½
608A	I	4	8-12¾x15½	15840	13.45	1750–625	†1600–625	Yes	55100	246⅜	73⅜	97½
▲MD-855	V	4	12-7⅞x7⅛	3931	15.50	1500–1600	1350–1550	Yes	9500	88½	55	89
▲MD-870	V	4	16-7⅞x7⅛	5242	15.50	2000–1600	1750–1550	Yes	12150	105½	55	89
Cooper-Bessemer FWAL-6-T	I	4	6-9x10½	4008	12.70	990–1000	990–1000	Yes	22000	134	59⅞	80½
FWAL-8-T	I	4	8-9x10½	5344	12.70	1310–1000	1310–1000	Yes	25000	164	59⅞	80½
FVAL-8-T	V	4	8-9x10½	5344	12.70	1310–1000	1310–1000	Yes	21500	102½	60	75⅝
FVAL-12-T	V	4	12-9x10½	8016	12.70	1975–1000	1975–1000	Yes	28500	133½	60	75⅝
FVAL-16-T	V	4	16-9x10½	10688	12.70	2630–1000	2630–1000	Yes	35000	166½	60	75⅝
Electro-Motive 6-567C	V	2	6-8½x10	3402	16.00		†600–800	No*	15000	115⅞	64⅞	84⅛
8-567C	V	2	8-8½x10	4536	16.00		†900–835	No*	18000	139⅛	62⅛	92⅛
12-567C	V	2	12-8½x10	6804	16.00		††1200–800	No*	25000	174⅛	64⅞	90⅛
16-567C	V	2	16-8½x10	9072	16.00		††1750–835	No*	32000	212⅛	62⅛	88⅛
Fairbanks-Morse 6-38D8⅛	O	2	6-8⅛x10	6221	16.10	1275–850	1275–850	No	26100	174	61	108½
8-38D8⅛	O	2	8-8⅛x10	8295	16.10	1720–850	1720–850	No	33000	200	60	108½
10-38D8⅛	O	2	10-8⅛x10	10369	16.10	2120–850	2120–850	No	39250	226⅝	67	108½
12-38D8⅛	O	2	12-8⅛x10	12443	16.10	2540–850	2540–850	No	44900	259	67	108½
10-38F5¼	O	2	10-5¼x7¼	3139	15.00	825–1200	825–1200	No	13200	157⅝	42⅞	74⅝
12-38F5¼	O	2	12-5¼x7¼	3767	15.00	990–1200	990–1200	No	15500	177	44	74⅝

ABBREVIATIONS

†—Horsepower available for traction.
▲—For use in diesel-hydraulic locomotives.
*—Engine has Roots type blower for scavenging use only; not supercharged.
I—In line.
O—Opposed piston.
V—"V" type engine.

For Directory of the Engine Manufacturers listed above, see page 286

★ ★ ★ ★ ★ SMALL

MAKE AND MODEL	Designed for Use	Number of Cycles	ENGINE: Type	No. of Cylinders	Bore and Stroke (In.)	Total Displacement (Cu. In.)	Compression Ratio (to —1)	Valve Location	Horsepower: Rated at RPM	Horsepower: Continuous at RPM	Torque—Lb. Ft. at RPM	Weight (Lb.)	GOVERNOR: Used	GOVERNOR: Type	Ignition System Type	FUEL SYSTEM: Type	FUEL SYSTEM: Make	Fuel Used	Starting Method
Continued from page 261									AIR COOLED—Continued										
Lawn-Boy C-12	Lawn Mowers	2	Hor	1	1 11/16x1 1/2	4.43			2.00-4000	1.75-3000	3.00-2800	15	Y	Ce	Mag	Car		G	Rr
McCulloch 33-B	Chain Saws	2	Ver	1	1 5/8x1 5/8	3.30	7.20	Re	2.20-5600		2.60-4800	20	N		Mag	Car	Own	G	AR
33-S	Chain Saws	2	Ver	1	1 5/8x1 5/8	3.30	7.20	Re	3.25-6500		2.70-5500	21	N		Mag	Car	Own	G	AR
47	Chain Saws	2	Ver	1	2x1 1/2	4.71	7.00	(c)	3.30-5000		4.60-4000	30	Y	Os	Mag	Car	Own	G	AR
4-30A	Chain Saws	2	Ver	1	2 1/8x1 1/2	5.30	6.75	(c)	4.80-6000		5.80-4800	31	Y	Os	Mag	Car	Own	G	AR
73	Chain Saws	2	Ver	1	2 1/8x1 1/2	7.35	6.80	(c)	6.75-6500		6.70-4000	32	Y	Ce	Mag	Car	Own	G	AR
99	Pu, Cs, ED	2	Hor	1	2 1/8x2	9.82	6.50	(c)	8.00-5200		11.80-3600	56	Y	Ce	Mag	Car	Own	G	AR
Onan AK	Generator Sets	4	Ver	1	2 1/8x2 1/2	12.20	5.50	L	3.76-3600	2.82-3600	5.80-1800	74	Y	(d)	Mag	Car	Cart	G	HEA
AJ	Generator Sets	4	Ver	1	2 5/8x2 1/2	14.90	6.25	L	5.10-3600	3.82-3600	8.00-2100	74	Y	(d)	Mag	Car	Cart	G	BPA
LK	Generator Sets	4	Ver	1	3 1/8x3	24.89	5.64	L	5.10-1800	4.34-1800	14.90-1800	114	Y	(d)	Mag	Car	Cart	G	HEA
CK	General Purpose	4	Op	2	3x2 3/4	38.80	6.20	L	10.10-3000	8.60-3000	10.00-3000	95	Y	(d)	BM	Car	MS	NgG	ERA
ACK	Generator Sets	4	Op	2	3x2 3/4	38.80	6.25	L	13.80-3600	10.00-3600	20.00-3600	125	Y	Me	Mag	Car	Til	G	RA
VB	Generator Sets	4	Vee	2	3 1/4x2 3/4	45.70	6.25	I	19.25-3600	16.20-3600	29.80-2800	140	Y	Me	Mag	Car	Zen	G	Ele
CCK	GP, Rf	4	Op	2	3 1/4x3	49.80	5.58	L	13.60-3000	11.50-3000	27.80-1800	129	Y	(d)	Mag	Car	MS	G	HEA
CW	Generator Sets	4	Op	2	4x3 1/2	88.00	5.50	L	20.00-1800	16.50-1800	58.30-1800	420	Y	Fb	Mag	Car	Zen	G	HE
Power Products AV36-2032	General Purpose	2	Ver	1	1 3/4x1 1/2	3.60		Re	1.30-3400	1.30-3400	1.92-3100	12 3/4	Y	Fb	Mag	Car	Til	G	R
AH36-1007	General Purpose	2	Hor	1	1 3/4x1 1/2	3.60		Re	1.30-3400	1.30-3400	1.92-3100	14 3/4	Y	Fb	Mag	Car	Til	G	R
AV36-2033	General Purpose	2	Ver	1	1 3/4x1 1/2	3.60		Re	1.40-3200	1.40-3200	2.00-3200	15	Y	Fb	Mag	Car	Til	G	AR
AH36-1008	General Purpose	2	Hor	1	1 3/4x1 1/2	3.60		Re	1.40-3200	1.40-3200	2.00-3200	17	Y	Fb	Mag	Car	Til	G	AR
AV47-2034	General Purpose	2	Ver	1	2x1 1/2	4.70		Re	1.90-3800	1.90-3800	2.67-3400	13	Y	Fb	Mag	Car	Til	G	R
AH47-1009	General Purpose	2	Hor	1	2x1 1/2	4.70		Re	1.90-3800	1.90-3800	2.67-3400	15	Y	Fb	Mag	Car	Til	G	R
AV47-2035	General Purpose	2	Ver	1	2x1 1/2	4.70		Re	1.80-3200	1.80-3200	2.92-3400	15 1/4	Y	Fb	Mag	Car	Til	G	AR
AH47-701	General Purpose	2	Hor	1	2x1 1/2	4.70		Re	1.80-3200	1.80-3200	2.92-3400	17	Y	Fb	Mag	Car	Til	G	AR
AV47-1010	General Purpose	2	Hor	1	2x1 1/2	4.70		Re	1.80-3200	1.80-3200	2.92-3400	17 1/4	Y	Fb	Mag	Car	Til	G	AR
V47-502	Lawn Mowers	2	Ver	1	2x1 1/2	4.70		Re	1.80-3400	1.80-3400	2.83-3200	13	Y	Av	Mag	Car	Til	G	R
V47-603	Lawn Mowers	2	Ver	1	2x1 1/2	4.70		Re	2.00-3400	2.00-3400	3.08-3200	17	Y	Fb	Mag	Car	Til	G	AR
BV69-361	General Purpose	2	Op	2	1 3/4x1 1/2	6.90		Re	2.30-3300	2.30-3300	2.50-3400	27 1/2	Y	Fb	Mag	Car	Til	G	R
BH69-364	General Purpose	2	Op	2	1 3/4x1 1/2	6.90		Re	2.30-3300	2.30-3300	2.50-3400	27 3/4	Y	Fb	Mag	Car	Til	G	R
AV80-407	General Purpose	2	Ver	1	2 1/4x2	8.00		Re	3.40-3400	3.40-3400	5.50-3000	23 1/2	Y	Fb	Mag	Car	Til	G	R
AH80-410	General Purpose	2	Hor	1	2 1/4x2	8.00		Re	3.40-3400	3.40-3400	5.50-3000	26	Y	Fb	Mag	Car	Til	G	AR
Reo MW-5200K	Lawn Mowers	4	Hor	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	28 1/2	Y	Av	Mag	Car	Cart	G	AR
MW-5210K	Lawn Mowers	4	Hor	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	31 1/2	Y	Av	Mag	Car	Cart	G	AR
MW-5220K	Snow Plows	4	Hor	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32	Y	Av	Mag	Car	Cart	G	AR
MW-5230K	Lawn Mowers	4	Ver	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32	Y	Av	Mag	Car	Cart	G	AR
MW-5240K	Lawn Mowers	4	Hor	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	27	Y	Av	Mag	Car	Cart	G	R
MW-5250K	Lawn Mowers	4	Ver	1	2 1/8x1 7/8	6.65	5.43	L	2.25-4000	1.70-3500	3.20-3500	32 1/4	Y	Av	Mag	Car	Cart	G	AR
United 1 1/2 HP	General Purpose	4	Ver	1	2 3/8x2 1/2	11.08		L				70	Y		Mag	Car	Til	G	Pe
2 HP	General Purpose	4	Ver	1	2 3/8x2 1/2	13.53		L				70	Y		Mag	Car	Til	G	Pe
4 HP	General Purpose	4	Ver	1	2 5/8x2 1/2	14.89		L				75	Y		Mag	Car	Til	G	Pe
West Bend 2704	Lawn Mowers	2	Vee	1	1 3/4x1 1/8	3.76		Re	1.50-3600	1.50-3600	2.30-3600	18 1/4	Y	Av	Mag	Car	Til	G	R
2756	Af	2	Hor	1	1 3/4x1 5/8	3.90		Re	2.80-4000	2.80-4000	3.50-4000	15	N		Mag	Car	Til	G	R
2777	GS, Ac, Pu, Af	2	Hor	1	2x1 1/8	4.90		Re	2.30-3600	2.30-3600	3.60-3600	17 1/2	Y	Av	Mag	Car	Til	G	R
2771, 2772, 2774, 2775	Chain Saws	2	Hor	1	2x1 5/8	5.10		Re	2.80-4000	2.80-4000	3.50-4000	15	N		Mag	Car	Til	G	Rc
2779	Chain Saws	2	Hor	1	2x1 5/8	5.10		Re	2.80-4000	2.80-4000	3.50-4000	15	N		Mag	Car	Til	G	R
2778	Chain Saws	2	Hor	1	2x1 5/8	5.10		Re	2.80-4000	2.80-4000	3.50-4000	17	N		Mag	Car	Til	G	R
Wisconsin ACN	General Purpose	4	Ver	1	2 3/4x2 3/4	14.88	5.90	L	5.60-3600	4.50-3600	8.60-2600	76	Y	Ce	Mag	Car	MS	G	R
BKN	General Purpose	4	Ver	1	2 7/8x2 3/4	17.80	5.31	L	6.80-3600	5.50-3600	10.80-2600	76	Y	Ce	Mag	Car	MS	G	R
AEH	General Purpose	4	Ver	1	3x3 1/4	23.00	4.88	L	6.10-2600	4.90-2600	13.00-2000	130	Y	Ce	Mag	Car	Zen	G	R
AEN	General Purpose	4	Ver	1	3x3 1/4	23.00	5.34	L	8.30-3400	6.64-3400	15.40-2200	110	Y	Ce	Mag	Car	Zen	G	R
AFH	General Purpose	4	Ver	1	3 1/4x4	33.20	4.60	L	7.20-2200	5.75-2200	19.80-1400	180	Y	Ce	Mag	Car	Zen	G	Hc
AGH	General Purpose	4	Ver	1	3 1/2x4	38.50	4.60	L	8.40-2200	6.70-2200	24.20-2200	180	Y	Ce	Mag	Car	Zen	G	Hc
AHH	General Purpose	4	Ver	1	3 1/2x4	41.30	4.60	L	9.20-2200	7.40-2200	25.80-1300	180	Y	Ce	Mag	Car	Zen	G	Hc
TE	General Purpose	4	Ver	2	3x3 1/4	45.90	5.44	L	11.20-2600	9.00-2600	27.10-1600	220	Y	Ce	Mag	Car	Zen	G	Hc
TF	General Purpose	4	Ver	2	3 1/4x3 1/4	53.90	5.50	L	14.60-2600	11.68-2600	32.50-1700	220	Y	Ce	Mag	Car	Zen	G	Hc
TFD	General Purpose	4	Ver	2	3 1/4x3 1/4	53.90	5.50	L	15.00-3000	12.00-3000	32.50-1700	220	Y	Ce	Mag	Car	Zen	G	Hc
									WATER COOLED										
Kermath Sea Pup	Marine	4	Ver	1	2 3/4x2 3/4	18.00	6.00	L	5.00-3200		10.00-2700	63	Y	Ce	Mag	Car	Til	G	ER
Sea Twin	Marine	4	Ver	2	2 3/4x2 1/2	30.00	6.20	L	10.00-3000		19.00-2700	109	Y	Ce	Mag	Car	Til	G	ER
United 2R14	Af	4	Hor	1	3 1/4x4 1/2	37.30		L				195	Y	(e)	Mag	Car	Til	G,K,D	Hc
3R20	Af	4	Hor	1	3 1/2x4 1/2	43.25		L				235	Y	(e)	Mag	Car	Til	G,K,D	Hc
4R30	Af	4	Hor	1	3 5/8x4 1/2	49.75		L				245	Y	(e)	Mag	Car	Til	G,K,D	Hc
Universal AFTC	Generator Sets	4	Ver	2	3x3 1/2	49.50	5.79	L	5.00-1200	6.00-1350	25.00-1200	385	Y	Me	BM	Car	Str	G	HE
AFC	GS, In	4	Ver	4	3x3 1/2	99.00	5.79	L	19.00-1800	18.00-1800	53.00-1800		Y	Me	BM	Car	Str	G,Ng	HE

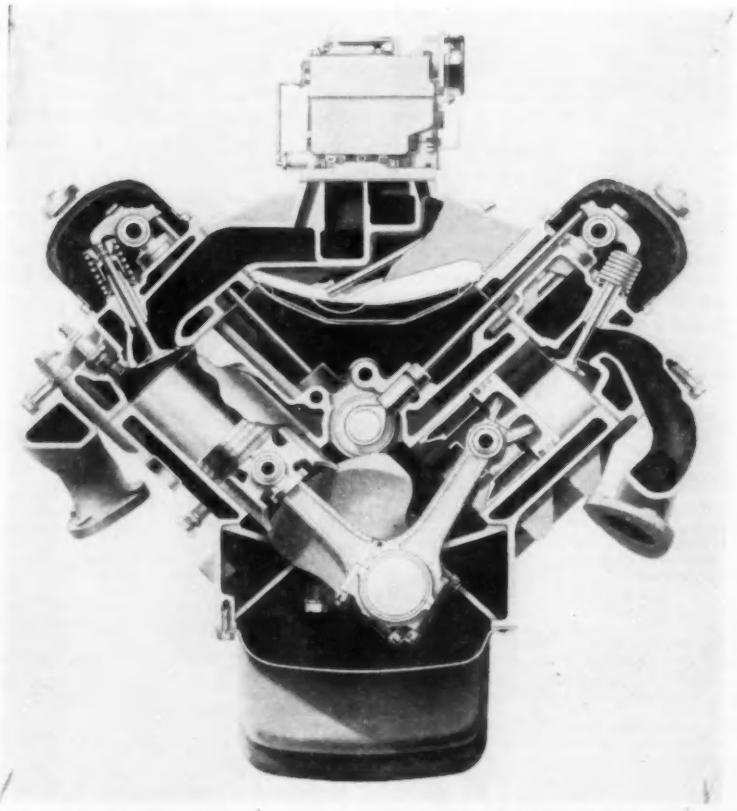
ABBREVIATIONS

*—Reduction gear model.
(a)—65 pounds per square inch.
(b)—Inclined 20° up from horizontal.
(c)—Rotary intake valve in crankcase.
(d)—Flyweights on camshaft.
(e)—Automatically controlled by flywheel.
Ac—Air compressors.
Af—Auxiliary farm implement equipment.
Am—Amal.
AR—Automatic rewinding rope.
Av—Air vane.
Bl—Blowers.
BM—Battery and magneto.
BP—Belt or pulley.
BPA—Belt, pulley or automatic rewinding rope.
BPE—Belt, pulley, pedal or electric.
BR—Belt, pulley or recoil.
Car—Carburetor.
Cart—Carter Carburetor Corp.
Ce—Centrifugal.
Cs—Chain saws.
CTZ—Carter, Tillotson or Zenith.
D—Distillate.
ED—Earth drills.
Ele—Electric.
ER—Electric or rope.
ERA—Electric, rope or automatic rewinding rope.
Fb—Flyball.
Fw—Flyweight.
G—Gasoline.
GP—General purpose.
GS—Generator sets.
Hc—Hand crank.
HE—Hand crank or electric.
HEA—Hand crank, electric or automatic rewinding rope.
Hor—Horizontal.
HR—Hand crank or rope.
I—Valves in head.
In—Industrial.
K—Kerosene.
L—"L" head, valves at side.
Lm—Lawn mowers.
MA—Mechanical or air vane.
Mag—Magneto.
Me—Mechanical.
MS—Marvel-Schebler Carburetor Div.
MV—Mixing valve.
N—No or none.
Ng—Natural gas.
Ng G—Combination of natural gas and gasoline.
O-C—Own or Carter.
Op—Opposed.
Opt—Optional.
O-T—Own and Tillotson.
Os—Over speed.
O-Z—Own and Zenith.
Pe—Pedal.
Pu—Pumps.
R—Rope.
RA—Rope or automatic rewinding rope.
Rc—Recoil.
Re—Reed valves.
Rf—Refrigeration equipment.
Rr—Recoil or rope.
Str—Stromberg Carburetor Div.
T—"T" head.
Til—Tillotson Mfg. Co.
Va—Valve.
Vee—"V" type engine.
Ver—Vertical.
Y—Yes.
Zen—Zenith Carburetor Div.

For Directory of the Engine Manufacturers listed above, see page 286

Design of the New American Motors V-8

By John F. Adamson, Carl E. Burke, and David V. Potter
Automotive Research and Engineering Dept., American Motors Corp.



Transverse cutaway view of the new engine which will be used in the Nash Statesman V-8 and the Hudson Hornet Special V-8

MANY of the desirable design features pioneered by Nash and Hudson on six cylinder powerplants have been incorporated into the new American Motors V-8. These features have been retained, in addition to ideas resulting from a very careful and thorough analysis of the newest industry-wide practices and methods. The above, together with a great deal of forward thinking, has produced an engine that will power a new series of American Motors' cars—the Nash Statesman V-8, and the Hudson Hornet Special V-8.

FLEXIBILITY

The new 3½ in. bore by 3¼ in. stroke, 250 cu in. V-8 was designed around a much greater displacement than is actually being produced this year. As examples, the valve sizes were determined by future breathing requirements, as were both the intake and exhaust port systems. The crankshaft forging was designed to give 100 per cent balance for much heavier reciprocating and rotating weights than now carried, and the water and oil pumps have a far greater capacity than present requirements. The cylinder center distance of 4¾ in. is considerably larger than that required for a 3½ in. bore, and allows for future increases without sacrificing coolant flow around the cylinder walls. Main bearing caps and bolts, and connecting rods, have likewise been designed for a greater load carrying capacity.

The above features, together with other factors, will allow for increased engine displacement without extensive tooling changes. The crankshaft balancing equipment would be revised only with regard to bob-weights, while no changes are needed on the block other than the pattern and machining revisions for bore size. As mentioned previously, the valves have been actually designed for a greater displacement, and consequently, the only change required in the cylinder head, for shifting to a bigger engine, would be the revising of the cast combustion chamber.

ENGINE SIZE

With regard to engine size, we set out to produce an engine that could be easily installed in not only our present line of cars, but also those projected for the future. From the styling standpoint, it had to be a low engine, and from the assembly installation standpoint, it was desirable to keep the width and length to a minimum.

These objectives were obtained by making the term "compact" the by-word of the entire project. A short stroke of 3¼ in. was chosen to reduce height and width, and the crankshaft counterweights are contoured to further shorten the distance from the crankshaft center-line to the top of the block. Exhaust manifolds are carried below the port openings in the head,

(*Turn to page* 431, *please*)

DIRECTORY OF MANUFACTURERS

Following are the company names and addresses of manufacturers whose products are listed in the tables of specifications of complete motor vehicles, tractors, aircraft, industrial trucks, and all types of gasoline and Diesel engines.

U. S. PASSENGER CARS

For details of their products see pages 132-149.

American Motors Corp., Detroit 32, Mich.
BUICK Motor Div., General Motors Corp., Flint 2, Mich.
CADILLAC Motor Car Div., General Motors Corp., Detroit 32, Mich.
CHEVROLET Div., General Motors Corp., Detroit 2, Mich.
CHRYSLER Div., Chrysler Corp., Detroit 31, Mich.
CLIPPER, see Packard Div.
CONTINENTAL Div., Ford Motor Co., Dearborn, Mich.
DE SOTO Div., Chrysler Corp., Detroit 31, Mich.
DODGE Div., Chrysler Corp., Detroit 31, Mich.
FORD Div., Ford Motor Co., Dearborn, Mich.
HUDSON, see American Motors Corp.
IMPERIAL, see Chrysler Div.
LINCOLN-MERCURY Div., Ford Motor Co., Dearborn, Mich.
MERCURY, see Lincoln-Mercury Div.
METROPOLITAN, see American Motors Corp.
NASH, see American Motors Corp.
OLDSMOBILE Div., General Motors Corp., Lansing 21, Mich.
PACKARD Div., Studebaker - Packard Corp., Detroit 32, Mich.
PLYMOUTH Div., Chrysler Corp., Detroit 31, Mich.
PONTIAC Motor Div., General Motors Corp., Pontiac 11, Mich.
RAMBLER, see American Motors Corp.
STUDEBAKER Div., Studebaker-Packard Corp., South Bend 27, Ind.

BRITISH PASSENGER CARS

For details of their products see pages 150-151.

A. C. Cars Ltd., Thames Ditton, Surrey, England.
A. E. N. Ltd., Isleworth, Middlesex, England.
ALVIS Ltd., Coventry, England.
ARMSTRONG-SIDDELEY Motors, Ltd., Coventry, England.
ASTON MARTIN, see David Brown and Sons, Ltd.
AUSTIN Motor Export Corp., Ltd., Longbridge, Birmingham, England.
AUSTIN-HEALEY, see Donald Healey Motor Co., Ltd.
BENTLEY, see Rolls-Royce, Ltd.
CITROEN Cars Ltd., Slough, Bucks, England.
DAIMLER Co., Ltd., Coventry, England.
David Brown and Sons, Ltd., Automobile Div., Feltham, Middlesex, England.
DELLOW Motors, Ltd., Alvechurch, Birmingham, England.
Donald Healey Motor Co., Ltd., London W.1, England.
FAIRTHORPE, Ltd., Chalfont St., Peter, Bucks, England.
FORD Motor Company, Ltd., Dagenham, Essex, England.
FRAZER-NASH, see A.F.N. Ltd.
HILLMAN, see Rootes Group.
HUMBER, see Rootes Group.
JAGUAR Cars, Ltd., Coventry, England.
JENSEN Motors Ltd., West Bromwich, England.
KIEFT Sports Cars, Handsworth, Birmingham, England.
LAGONDA, see David Brown and Sons, Ltd.
LANCHESTER, see Daimler Co., Ltd.
LEA-FRANCIS Cars, Ltd., Coventry, England.
M.G., see Nuffield Exports Ltd.
MORGAN Motor Co., Ltd., Malvern Link, Worcestershire, England.
MORRIS, see Nuffield Exports Ltd.
Nuffield Exports Ltd., Cowley, Oxford, England.
RILEY, see Nuffield Exports Ltd.
ROLLS-ROYCE, Ltd., Motor Car Div., London, W.1, England.
Rootes Group, Coventry, England.
ROVER Company Ltd., Solihull, Birmingham, England.
SINGER Motors, Ltd., Coventry & Birmingham, England.
STANDARD Motor Co., Ltd., Coventry, England.
SUNBEAM, see Rootes Group.
TRIUMPH, see Standard Motor Co.
VAUXHALL Motors Ltd., Luton, Bedfordshire, England.
WOLSELEY, see Nuffield Exports Ltd.

OTHER FOREIGN CARS

For details of their products see pages 151-153.

AUSTRALIA

General Motors-HOLDEN'S Ltd., Melbourne, Australia.

AUSTRIA

STEYR-DAIMLER-PUCH, Steyr, Austria.

CZECHOSLOVAKIA

MOTOKOV, Praha 7, Czechoslovakia.
SKODA, see Motokov.

FRANCE

BUGATTI, Molsheim, Bas-Rhin, France.
Societe Anonyme Andre CITROEN, Paris 15, France.
S.A. des Anciens Etablissements PANHARD & Levassor, Paris 19, France.
S.A. des Automobiles PEUGEOT, Paris 8, France.
Regie Nationale des Usines RENOULT, Billancourt, Seine, France.
Robert de ROVIN, Paris 17, France.
Societe des Moteurs SALMSON, Billancourt, Seine, France.
Soc. Industrielle de Mecanique et Carrosserie Automobile (SIMCA), Paris 16, France.
Automobiles TALBOT-Darracq S.A., Seine, France.

GERMANY

Auto Union G.M.B.H., Dusseldorf, Germany.
Bayerische Motoren Werke Aktiengesellshaft, Munchen 13, Germany.
Carl F. W. BORGWARD, Bremen, Germany.
DKW, see Auto Union G.M.B.H.
DAIMLER-Benz A.G., Stuttgart-Unterturkheim, Germany.
FORD-Werke AG., Koln-Niehl, Germany.
Hans GLAS Isaria-Vertreibs-KG., Dingolfing 1 Bayern, Germany.
GOLIATH-Werk G.M.B.H., Bremen 11, Osterdeich 222, Germany.
LLOYD Motoren Werke GMBH, Bremen, Vulkanstr., Germany.
MERCEDES-BENZ, see Daimler-Benz A.G.
Adam OPEL, Aktiengesellschaft, Russelsheim Am Main, Germany.
Dr. Ing. h.c. F. PORSCHE K.G., Stuttgart-Zuffenhausen, Germany.
VOLKSWAGENWERK GMBH, Wolfsburg, Germany.

ITALY

ABARTH & Co., Torino, Italy.
ALFA ROMEO, via M.U. Traiano, 33, Milano, Italy.
FERRARI Automobili, Modena, Italy.
FIAT, Turin, Italy.
ISO S.P.A. Autoveicoli, Milano, Italy.
LANCIA & CO., Torino, Italy.
Officiene Alfieri MASTERATI, Modena, Italy.
Automobili O.S.C.A., Bologna, Italy.

JAPAN

NISSAN Motor Co., Ltd., Kanagawa-ku, Yokohoma, Japan.
OHTA Jidoska Kogya K. K., Higashi-Shinagawa, Shinagawa-ku, Tokyo, Japan.
TOYOPET, see Toyota Motor Co., Ltd.
TOYOTA Motor Co., Ltd., Koromo-shi, Aichi-Ken, Japan.

SPAIN

Empresa Nacional De Autocamiones S.A., Madrid, Spain.
PEGASO, see Empresa Nacional De Autocamiones S.A.

SWEDEN

Svenska Aeroplan Aktiebolaget, Trollhattan, Sweden
SAAB, see Swenska Aeroplan Aktiebolaget.
Aktiebolaget VOLVO, Goteberg 1, Sweden.

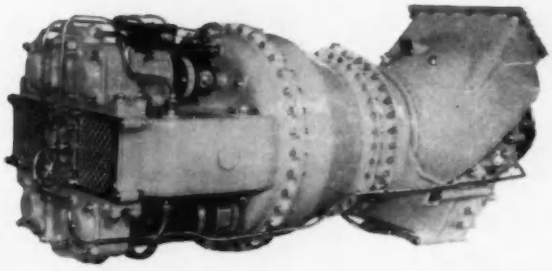
TRUCKS

For details of their products see pages 154-161.

American-Coleman Co., Omaha 2, Neb.
AUTOCAR Div., White Motor Co., Exton, Penna.
AVAILABLE Truck Co., Chicago 47, Ill.
BIEDERMAN Motors Corp., Cincinnati 14, Ohio.
BROCKWAY Motor Co., Inc., Cortland, N. Y.
CHEVROLET Motor Div., General Motors Corp., Detroit 2, Mich.
COLEMAN, see American-Coleman Co.
DIAMOND T Motor Car Co., Chicago 23, Ill.
DIVCO Corp., Detroit 5, Mich.
DODGE Div., Chrysler Corp., Detroit 31, Mich.
DUPLEX Truck Co., Lansing 4, Mich.
FABCO, see F.A.B. Mfg. Co.
F.A.B. Mfg. Co., Oakland 8, Cal.
FEDERAL Motor Truck Co., Detroit 9, Mich.
FORD DIV., Ford Motor Co., Dearborn, Mich.
FWD, see Four Wheel Drive Auto Co.
Four Wheel Drive Auto Co., Clintonville, Wis.
KENWORTH Motor Truck Corp., Seattle 14, Wash.
MARMON-HERRINGTON Co., Inc., Indianapolis 7, Ind.
NAPCO, see Northwestern Auto Parts Co.
Northwestern Auto Parts Co., Minneapolis 11, Minn.
OSHKOSH Motor Truck, Inc., Oshkosh, Wis.
PETERBILT Motors Co., Oakland 5, Calif.
REO Motors, Inc., Div. of Bohn Aluminum & Brass Corp., Lansing 20, Mich.
STUDEBAKER Div., Studebaker-Packard Corp., South Bend 27, Ind.
TRUCKSTELL Mfg. Co., Cleveland 14, Ohio.
WALTER Motor Truck Co., Ridgewood, L. I., N. Y.
WARD LA FRANCE Truck Corp., Elmira Heights, N. Y.
WHITE-FREIGHTLINER Div., White Motor Co., San Francisco 7, Cal.
WILLYS Motors Inc., Toledo 1, Ohio.

(Turn to page 420, please)

Turmo 600 Shaft Turbine Developed in Britain



Left front quarter view of the Turmo 600 shaft turbine.

THE Turmo 600 shaft turbine is the latest of the Turbomeca series to be made in Britain by Blackburn and General Aircraft Ltd. It develops 450 hp with a net dry weight of only 281 lb, and specific fuel consumption is 1.07 lb/hp/hr. Overall length is 46.12 in., width 17.1 in., and height 21 in.

The gas producer section, comprising centrifugal compressor, rotary sprayer combustion chamber and single-stage turbine, is common to the other engines of this family. To this is added a free power turbine and single- or double-reduction gearbox, designed to provide shaft speeds from 819 to 7200 rpm.

The original French design was considerably modified and lightened by the British company to make the Turmo suitable for aircraft, and it is now felt to be well adapted for helicopter applications.

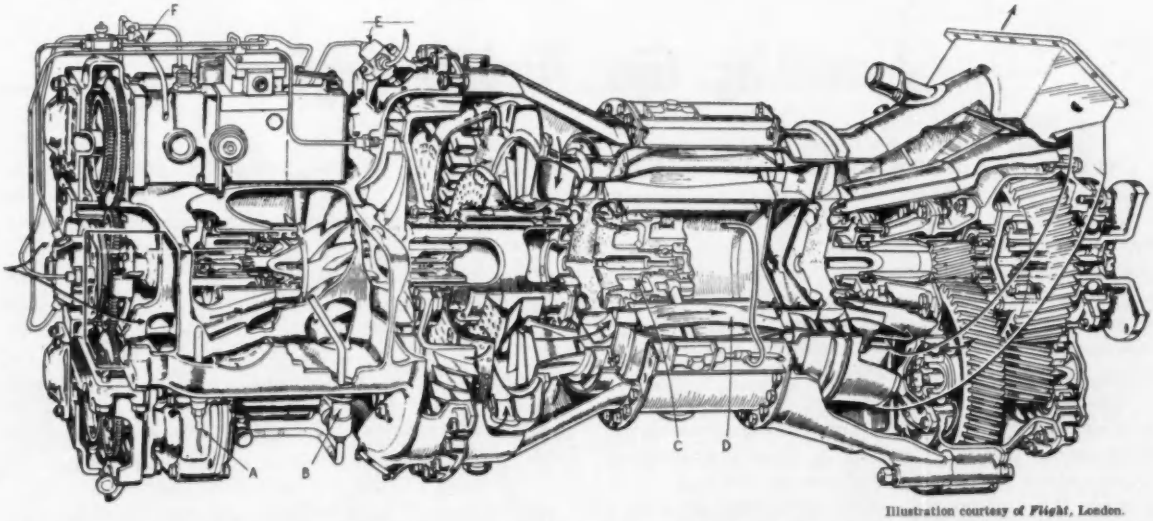


Illustration courtesy of *Flight*, London.

Part-cutaway view of the Turmo 600. A—Oil temperature bulb. B—New oil-tank balance pipe and scavenge return. C—Redesigned cooling fan integral with the shaft. D—Bearing housing support which has been lengthened 2 in. to 6 in. E—Redesigned torch igniter. F—Re-routed piping and rubber O-ring sealed unions.

• • •

Jet Testing System Viewed As Having Automotive Uses

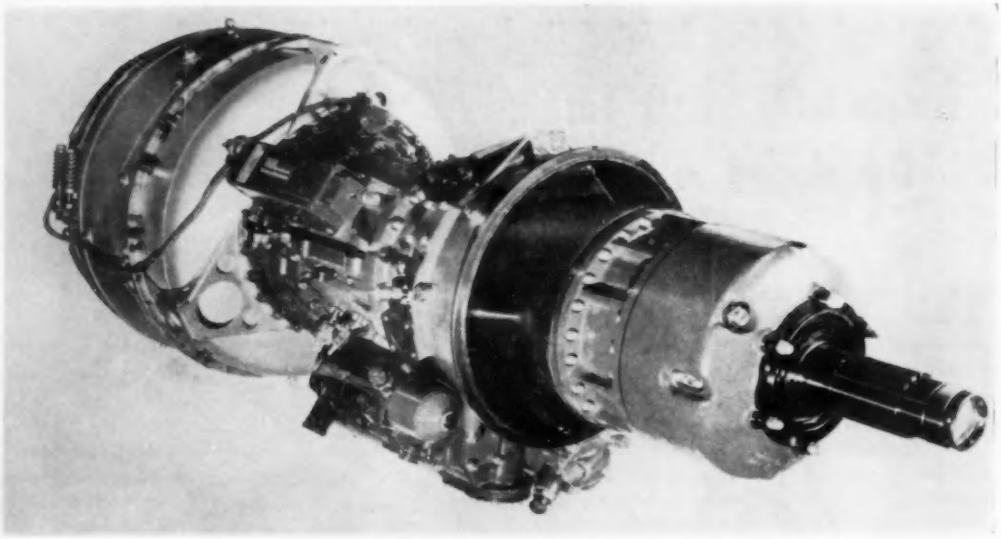
Telemetering—the electronics technique best known for its use in tracking guided missiles from the ground—will be used for testing many functions of jet aircraft in actual flight instead of on the ground.

The new testing tecnnique was described by M. C. Bartz, senior project engineer for fuel systems engineering at Bendix Products Div. of Bendix Aviation Corp. at a recent SAE divisional meeting in South Bend, Ind.

While the jet plane climbs, dives and goes through other maneuvers at various speeds and altitudes, pick-up devices on the plane will sense such things as engine speeds, internal pressures, temperatures and rates of fuel flow, Mr. Bartz said. These are converted into radio signals and instantly recorded on the ground.

To make the most effective use of telemetered flight tests, Bendix has developed a mobile instrumentation set-up. It is housed in a truck-trailer that can be parked near the flying field from which the test plane is operating.

Mr. Bartz went on to say that the telemetering system will have a number of industrial applications, particularly in the automotive field. It could record such data as transmission speed slip during acceleration, shock absorber performance, the effect of road shock on a power-steering system, or virtually any other details of automobile performance.



Lycoming XT53--L1 gas turbine engine

NEW
Lycoming Gas Turbine Engine

THE Lycoming XT53-L-1 gas turbine engine, which employs the free-power turbine principle, is the first American power plant of its type in the aircraft field. With a 23-in. diameter, 47.6-in. length, and weight of only 460 lb, it develops 825 hp at military rated power and 770 shp at normal rated or maximum continuous power. Specific fuel consumption for these power ratings is given at 0.71 and 0.72 lb per shaft horsepower per hour.

The XT53 consists essentially of a combination axial-centrifugal compressor and external annular vaporizing combustor, a single stage compressor driving turbine and a single stage free power turbine.

With the free-power turbine principle, the power turbine and its associated shafting and reduction gearing are mechanically independent of the compressor and its turbine. Such a system provides an integral torque conversion system where output torque increases with a decrease in output speed at constant power. Thus output shaft power may be held virtually constant over a wide range of shaft speeds above and below the optimum shaft speeds, or vice-versa, power may vary while output shaft speed is held constant.

Since the XT53 was designed primarily for use as a power plant for helicopters, the optimum output shaft speed for military and normal rated power is about 6600 rpm. However, for applications requiring lower output shaft speeds, an auxiliary gearbox is available which bolts directly to the front of the basic helicopter engine and further reduces optimum output speed to approximately 1750 rpm. The addition of this auxiliary gearbox increases the weight of the engine to 549 lb and the length to 64.5 in. It should be pointed out that this double gearbox configuration is not to be considered as an optimum arrangement and that Lycoming expects to produce a version of the XT53 using a single reduction gear to obtain the lower shaft speeds if sufficient interest is evidenced.

Developed under contract with the U. S. Air Force and U. S. Army, with initial production allocated for Government use, the XT53 is slated to power the XH-40, a new Army utility helicopter to be manufactured by Bell Aircraft. Potential applications of the engine include fixed-wing planes, boats, heavy ground vehicles and emergency stationary generators.

The engine is designed to operate on a wide variety of fuels, including automotive and aviation type gasolines and JP-4 jet fuel.

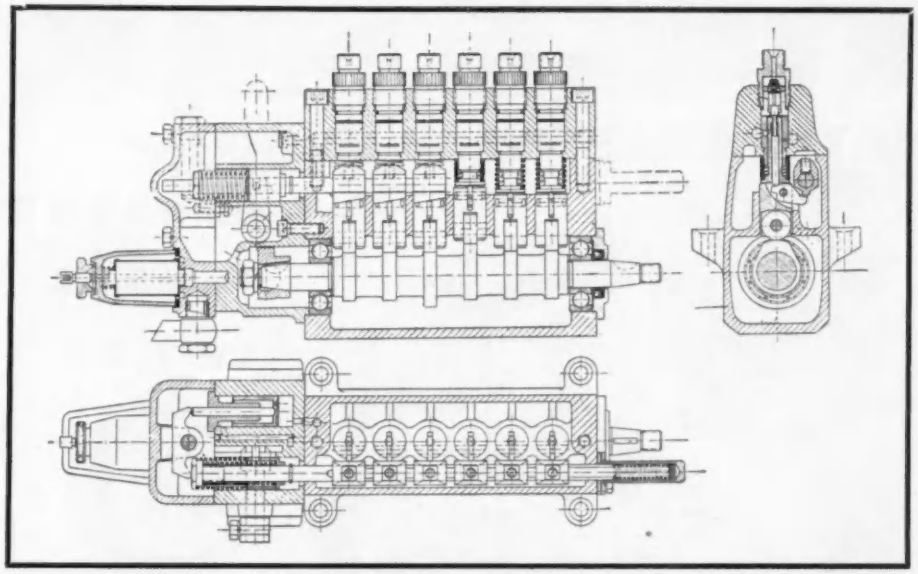
• • •

Russia Spurs Its Efforts To Boost Vehicle Output

Under a new five-year plan (1956 to 1960) Russian automobile production should rise to 650,000 vehicles during the year 1960. These should consist of 450,000 trucks, 150,000 passenger cars, and 50,000 buses and coaches.

Russian automobile production in 1955 totaled 445,200 vehicles of all types. The total was composed of 340,000 trucks, 80,000 passenger cars, and 25,200 buses and coaches.

Passenger car production is lower than that of any European automobile producing country. It is likely to remain low, notwithstanding the promised appearance of new models, such as the Volga and the Squirrel.



Picha & Schneider injection pump with plunger-controlled cutoff and hydraulic governor.

By
P. M. Heldt

Fuel-Injection Pump for Diesels Has New Delivery Control System

A FUEL-INJECTION pump for Diesel engines embodying a new principle of delivery control has been developed in Vienna, Austria, by the firm of Picha & Schneider. It is of the plunger type, but the cutoff, instead of being effected by the helical edge of a groove in the plunger, is brought about by a control plunger on top of the main plunger. The main plunger is actuated by means of a cam through the intermediary of a roller-type tappet in the usual way. Pivoted on the tappet is a double-armed lever, of which the inner end bears against the lower end of a "needle" within the tubular plunger. Upward movement of the outer end of the lever is limited by a cam on a longitudinally movable control rod.

During the first part of the injection stroke the control plunger moves upward in unison with the main plunger, but when the outer end of the lever comes in contact with the control cam, the lever turns on its pivot and lifts the control plunger through the intermediary of the "needle," thereby effecting the cutoff. The cam surface of the control cam can be made either straight or curved, and the torque-speed curve of the engine changed accordingly. The pump has a stroke of only 4.5 instead of the usual 10 mm. (0.177 instead of 0.394 in.). This short stroke is said to be practical because there is no need for a helical control groove on the plunger, and it is claimed to result in "a small reciprocating mass, a small inertia force, low stresses, and a low noise level." In this connection, however, it should not be overlooked that when the stroke is reduced in the proportion of 10 to 4.5, the bore must be increased about 50 per cent for the same displacement. The leakage area around the plunger is then increased proportionally, and to keep down the leakage the plunger evidently would have to be made longer.

Engine speed control is by means of a hydraulic governor built integral with the injection pump. A transfer pump of the double-piston type also is built integral with the injection pump, and is actuated by an eccentric on the pump shaft at the governor end. The piston of the hydraulic governor acts through a double-armed lever on the sliding rod carrying the control cams, against the pressure of two springs. Advantages claimed for the hydraulic governor over the centrifugal type are that it has no heavy rotating masses subjected to forces that increase as the square of the speed; that it has practically no inertia and responds instantly to speed changes, and that all of its parts operate in a bath of bypassed fuel, which makes lubrication unnecessary. A hydraulic governor, moreover, can be more readily adapted to different engine requirements, by merely changing the cam outline. The excess of fuel delivered by the transfer pump passes through a relief valve into the camshaft housing, and from there by way of the governor chamber back to the fuel tank. Only a single inlet connection and a single return connection to the tank need to be made. The pump is said to weigh only two-thirds as much, and to require only one-half the installation volume of pumps of conventional design. (Based on an article in *MTZ* for January, 1956.)

WAUKESHA

THE PAYLOAD POWER PLANT—

GASOLINE

DIESEL

LP GAS

50th ANNIVERSARY Waukesha MOTOR CO. 1906-1956

Dual springs, long guides. Pressure-oiled rockers. Stellite-faced valves, seats.

Clean-burning combustion chamber removes from outside. Upper half water cooled; lower half air insulated to concentrate heat at throat.

Four non-stick "keystone" rings, top ring chrome-plated. Two flat oil rings.

Full length water jackets.

Renewable cylinder sleeves.

Built-in oil cooler increases oil and engine life.

American Bosch injection pump and single-hole pintle nozzles.

Rifle-drilled rods. Oil jets cool pistons.

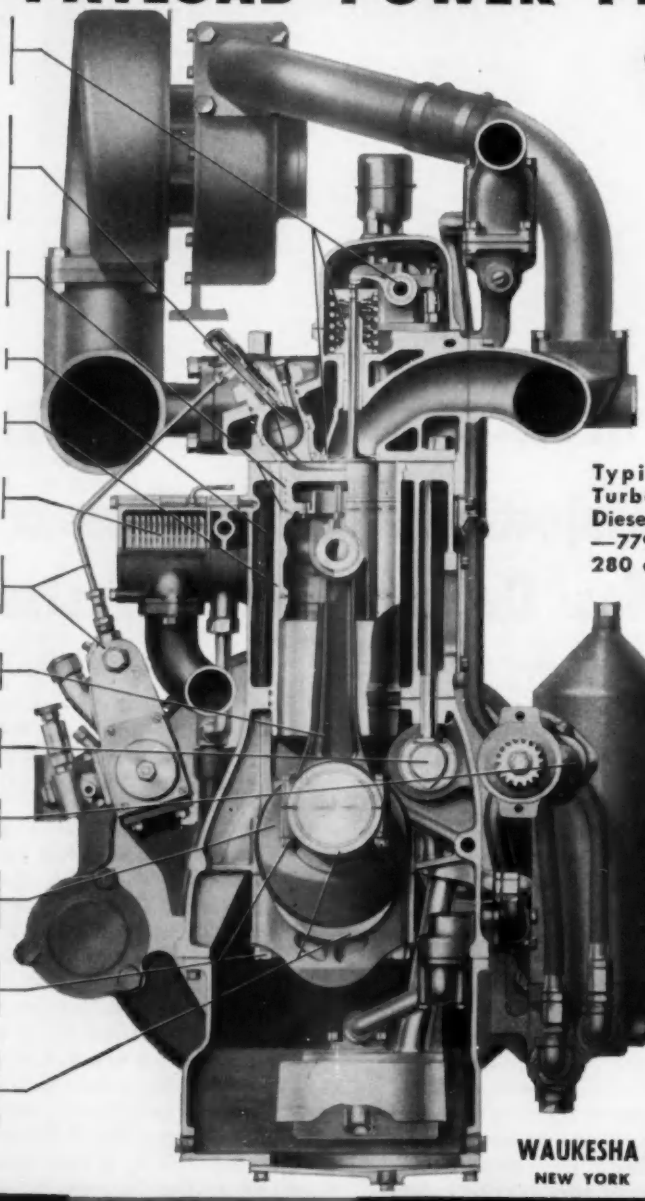
Hardened camshaft, single forging.

High-capacity outside oil pump.

Drop-forged hardened crankshaft. High-speed counterweights not shown.

Alloy-steel heat-treated rod and main bearing bolts.

Hardened main and rod journals. Steel-back, triple-element precision bearings, pressure oiled.



Typical Waukesha Turbocharged Truck Diesel Model 148-DKBS —779 cu. in. Max. hp 280 at 2100 rpm.

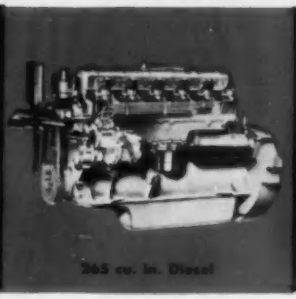


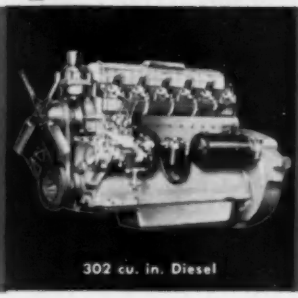
299

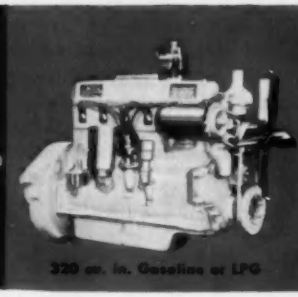
WAUKESHA MOTOR CO., Waukesha, Wis.

NEW YORK • TULSA • LOS ANGELES


265 cu. in. Gasoline or LPG


365 cu. in. Diesel


302 cu. in. Diesel

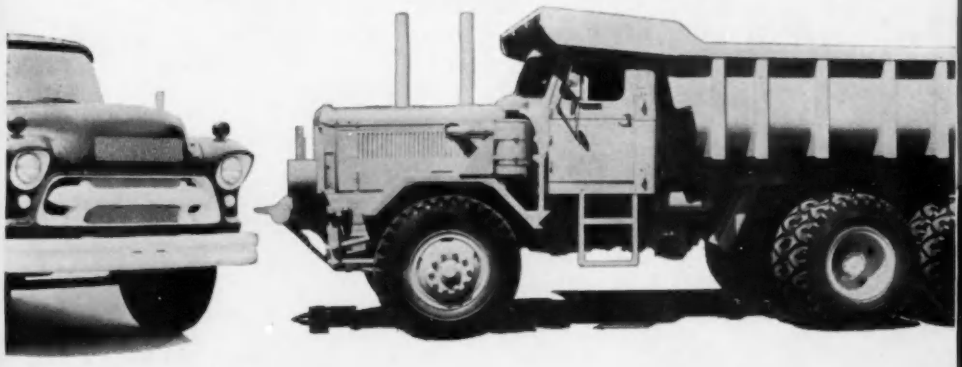

320 cu. in. Gasoline or LPG

ENGINES

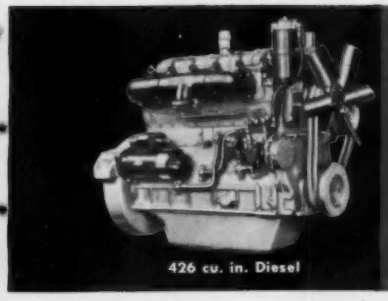
MODEL	Cyl.	*Features	Bore and Stroke	Displ. Cu. In.	Max. Torque @ RPM	Max. HP	RPM
TURBO-SUPERCHARGED DIESELS							
135-DKBS	6	ACTV	4¼x5	426	400-1800	185	2800
148-DKBS	6	ACTV	5¼x6	779	706-1800	280	2100
WAKDBS	6	ACTV	6¼x6½	1197	1062-1600	352	1800
NORMAL DIESELS							
185-DLC	6	A	3½x3¾	216	152-1200	60	2400
190-DLCA	6	AC	3¾x4	265	191-1400	85	2800
195-DLCA	6	AC	4 x4	302	221-1800	98	2800
135-DKB	6	ACV	4¼x5	426	328-1600	147	2800
148-DKB	6	ACV	5¼x6	779	584-1000	200	2100
WAKDB	6	ACV	6¼x6½	1197	845-1000	258	1800
GASOLINE							
185-GLB	6	A	3½x3¾	216	176-1400	67	2400
190-GLB	6	A	3¾x4	265	220-1200	77	2400
195-GKA	6	ACV	4⅛x4	320	243-1600	122	3000†
MZA	6	A	4¼x4¾	404	289-1000	128	2800†
135-GKB	6	ACV	4¼x5	426	337-1200	147	2800†
135-GZB	6	ACV	4⅜x5	451	354-1200	153	2800†
140-GKB	6	ACV	4½x5½	525	425-1000	177	2600†
140-GZB	6	ACV	4⅝x5½	554	448-1100	188	2600†
145-GKB	6	ACV	5¼x6	779	595-1000	240	2400†
145-GZB	6	ACV	5⅜x6	817	630-1100	250	2400†
WAKB	6	ACV	6¼x6½	1197	1000-1000	280	1800

***FEATURES:** A—Aluminum Alloy Pistons; C—Counterbalanced Crankshaft; T—Turbo-Supercharged; V—Vibration Dampner.

†These engines rated at higher hp and rpm for fire engine service. *Send for Bulletin 1079 for LPG ratings and complete listing of engine hp and speed ratings.*



OVER THE ROAD OR OFF THE HIGHWAY



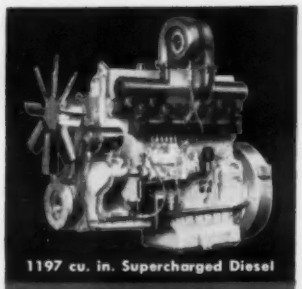
426 cu. in. Diesel



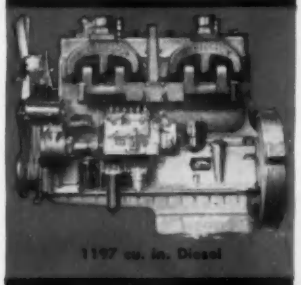
426 cu. in. Supercharged Diesel



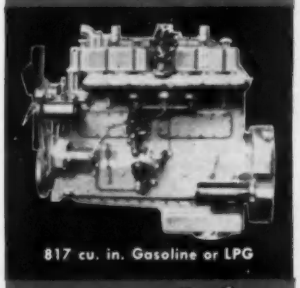
554 cu. in. Gasoline or LPG



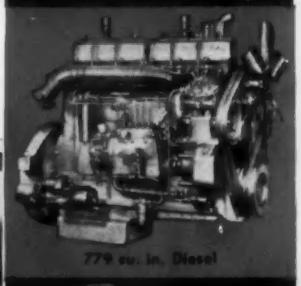
1197 cu. in. Supercharged Diesel



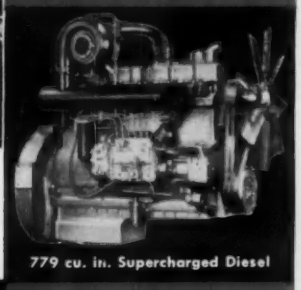
1197 cu. in. Diesel



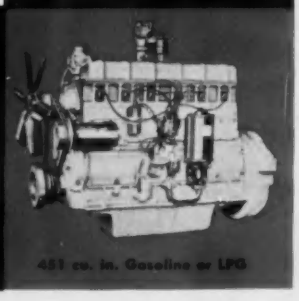
817 cu. in. Gasoline or LPG



779 cu. in. Diesel



779 cu. in. Supercharged Diesel



451 cu. in. Gasoline or LPG



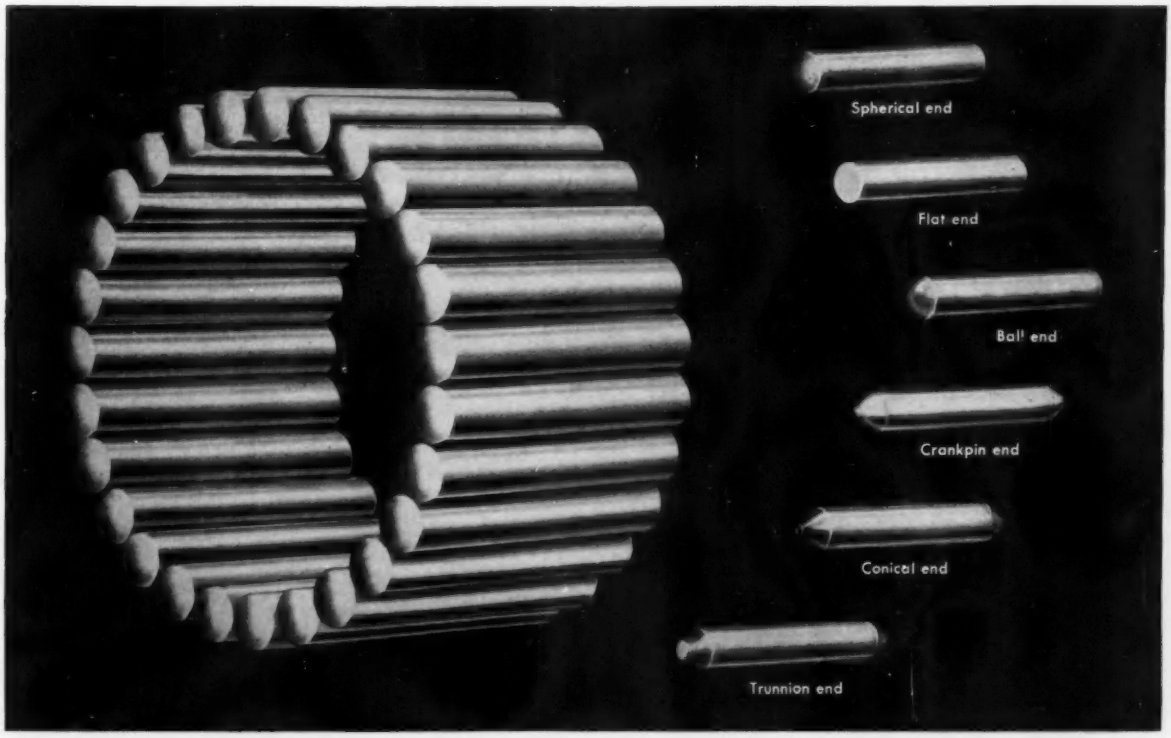
VISION IN PRECISION ENGINEERING

Creative engineering has long been identified with McQuay-Norris. From this pioneering spirit have come some notable achievements: *phosalloy* . . . *Chrome-Control* . . . the *400 oil ring.* If our progressive design and production facilities can serve you, we cordially invite your inquiry.

McQUAY-NORRIS

PISTON RINGS . . . HARDENED AND GROUND PARTS

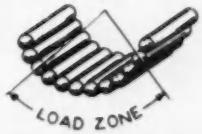
McQUAY-NORRIS MANUFACTURING COMPANY
ST. LOUIS 10, MISSOURI



TORRINGTON Needle Rollers

for the ultimate in load capacity at low cost

High radial capacity in minimum space stems from full complement of small-diameter rollers. Load zone contains maximum number of contact lines.



Fine finish contributes to efficient anti-friction performance. Needle Rollers are usually polished to 4-6 rms, but finishes as fine as 1-3 are available on special order.

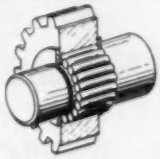




High carbon chrome steel is carefully hardened, ground and lapped to make each Needle Roller a precision part for long-life performance.

Close tolerances on Needle Rollers are assured by stringent quality controls. Standard OD tolerance is .0002" but rollers can be supplied with OD tolerance of .00005." Tolerance on length dimension depends on end formation.





Mounted without races between hardened shaft and hardened housing (RC-60 recommended), Needle Rollers allow largest possible shaft diameters.

Torrington Needle Rollers provide the lowest cost, highest capacity anti-friction bearings obtainable. They are manufactured in a complete line to meet SAE and AFBMA specifications. Available in the inexpensive spherical end type or in other end shapes, they provide maximum retainment and fillet clearances or greater lip retainment. Needle Roller standards for material, heat treat, tolerance and finish are the highest in the industry.

Good operating results with Needle Rollers require careful design of mating parts furnished by the user. The Engineering Department of The Torrington Company, with broad experience in applications of Needle Rollers, will be glad to give you technical advice on your needs.

THE TORRINGTON COMPANY
Torrington, Conn. · South Bend 21, Ind.

District offices and distributors in principal cities of United States and Canada

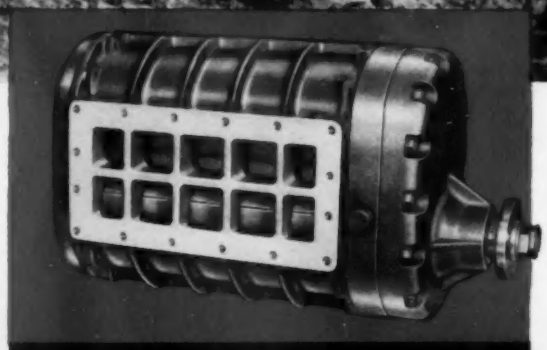
TORRINGTON BEARINGS

90th ANNIVERSARY

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

GIANT HD-21 CRAWLER DOZES with Supercharged Power!





ALLIS-CHALMERS STANDARDIZES ON MIEHLE-DEXTER SUPERCHARGERS FOR THEIR DIESEL ENGINES

Like so many leading Diesel engine manufacturers, Allis-Chalmers specifies Miehle-Dexter Superchargers for their engines.

And that's one of the reasons this new giant torque converter driven crawler tractor—the Allis-Chalmers Model HD-21—claims to be one of the most powerful crawlers . . . anywhere! Rough and rugged dozing needs power aplenty. And here's *extra* speed at any load, *extra* pushing or pulling power at any speed, wider speed range and more range overlap—thanks to Miehle-Dexter Supercharged Power.

You, too, can boost the horsepower of your engines by 50% or more . . . and decrease weight per horsepower, too. Miehle-Dexter engineers can specify the exact size and type M-D supercharger for your engines. Standard M-D models available for applications to 750 hp. Write for bulletin.

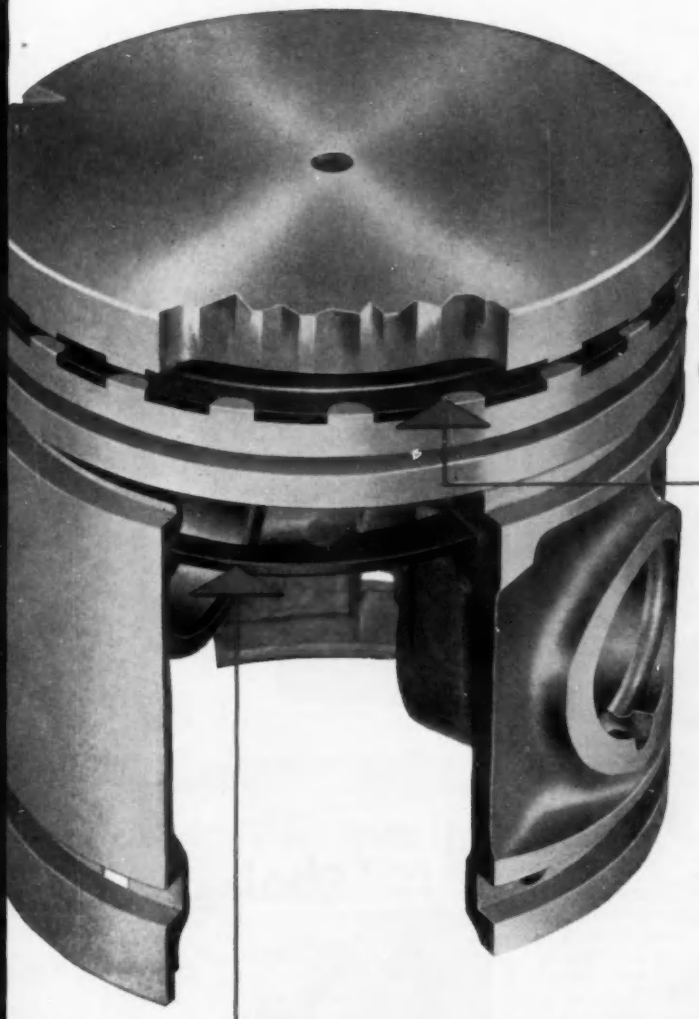
FOUR FEATURES PROVE MIEHLE-DEXTER SUPERCHARGERS BETTER ON THE JOB

- Patented end plate seals eliminate metal-to-metal contact, assure longer life, help achieve fuel savings.
- Rotor wear strips eliminate contact between rotors and housing, assure longer wear.
- Lightweight aluminum rotors and aluminum case boost engine horsepower, do not add weight, safely allow high speeds.
- All parts are standardized, allowing easy field service and interchangeability.

NOW ON TEST...
AN ENTIRELY NEW TYPE
OF TURBOCHARGER!

MIEHLE-DEXTER SUPERCHARGER
Division of the Dexter Folder Company
100 Fourth Street • Racine, Wisconsin

NOW! STERLING CONFORMATIC* PISTONS



CONFORMATIC STEEL CONTROL MEMBER, anchored at the pin bosses only, controls skirt clearance . . . hot or cold! The metered steel insert allows you to specify the piston clearance you want for your engine. (Clearances from zero to ½ thousandth inch are generally recommended.)

are available with LOW COST Intra-Cast* STEEL-LINED GROOVES

***Steel protection—top and bottom*—gives sensationally longer life to rings and grooves.**

This ring is *integrally cast* into the piston . . . positioned so that when the grooves are machined, the top ring groove is *lined with steel* and has islands of aluminum for ring cooling. This Intra-Cast steel-protected groove resists enlargement and materially reduces top ring land wear and rounding. And, it does it at far less cost than other methods.

** Tradename Registered*

STERLING ALUMINUM PRODUCTS INC.

ST. LOUIS, MISSOURI

if the FLEET OWNER built his own trucks—





ZENITH CARBURETORS

would be *his* choice

They say it's a buyer's market. Well the truth is, for the truck operator, it's always been a buyer's market.

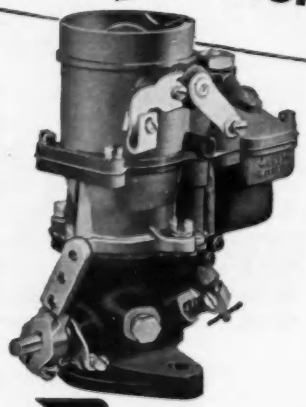
No American businessman sets more exacting standards than the fleet operator in his purchase of new equipment. There is good reason for this, for the operator's success or failure is to a very large degree determined by the efficiency of the vehicle he employs.

This yardstick of efficiency is likewise applied to every component part that contributes to truck performance.

That's why you can be certain if truck operators built their own trucks, Zenith* would be the choice for standard equipment.

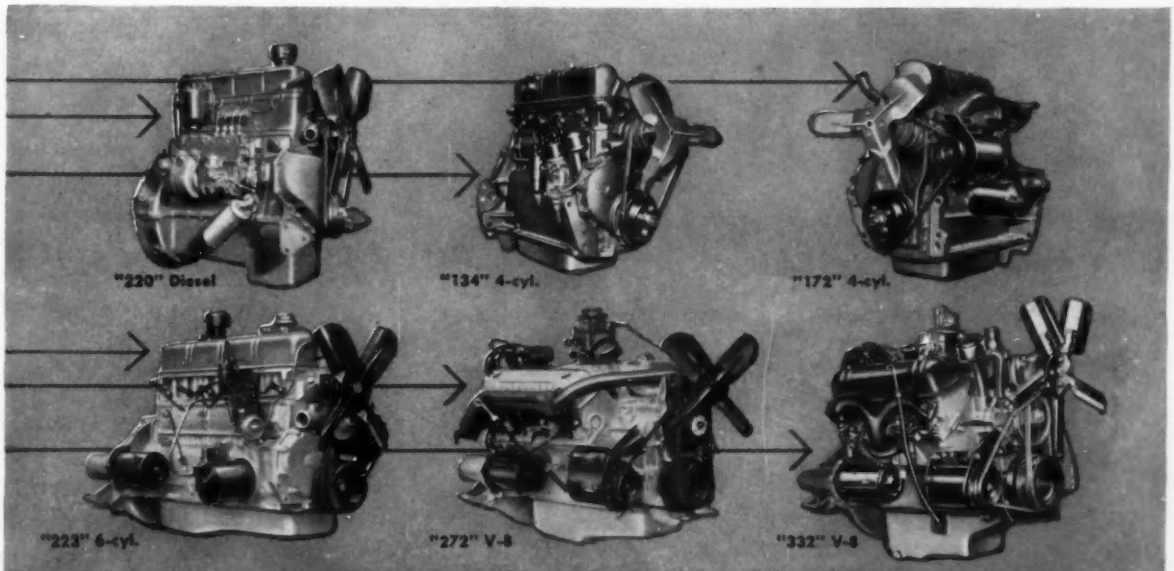
One more reason why—if you build, buy, sell or operate trucks, Zenith should be *your* choice for the best in carburetion.

*REG. U.S. PAT. OFF.



ZENITH CARBURETOR DIVISION OF Bendix AVIATION CORPORATION

696 Hart Avenue, Detroit 14, Michigan • Export Sales: Bendix International Division, 205 East 42nd St., New York 17, N. Y.



There's a Ford Industrial Engine to meet your power needs!

ENGINE SERIES		DIESEL	134 FOUR	172 FOUR	223 SIX	272 V-8	332 V-8
Basic Model		MD	E	D	F	J	L
Type		4-Cyl. O.H. Valve	4-Cyl. O.H. Valve	4-Cyl. O.H. Valve	6-Cyl. O.H. Valve	V-8, 90° O.H. Valve	V-8, 90° O.H. Valve
Bore and Stroke—Inches		3.94 x 4.52	3.44 x 3.6	3.9 x 3.6	3.62 x 3.6	3.62 x 3.3	3.8 x 3.66
Displacement—Cubic Inches		220	134	172	223	272	332
Brake Horsepower	Dynamometer	62 @ 2400	48 @ 2800	61 @ 2800	102 @ 2800	132 @ 2800	160 @ 2800
	Continuous	50 @ 2400	38 @ 2800	48 @ 2800	81 @ 2800	106 @ 2800	128 @ 2800
Torque	Dynamometer	151#' @ 1600	110#' @ 1400	148#' @ 1300	193#' @ 1800	205#' @ 2400	308#' @ 2400
	Continuous	121#' @ 1600	88#' @ 1400	119#' @ 1300	155#' @ 1800	200#' @ 2400	246#' @ 2400
Compression Ratio		16 to 1	6.6 to 1	6.75 to 1	7.8 to 1	7.8 to 1	7.5 to 1

Specifications subject to change without notice.

And, Ford Industrial Power is *RIGHT* in all these ways:

❶ For your particular application, there's a choice of six rugged power plants . . . ranging from 134 to 332 cu. in. displacement. These are available either as engine assemblies or complete power units in either open or closed types (skid- or foot-mounted) with a number of special accessories to serve special needs.

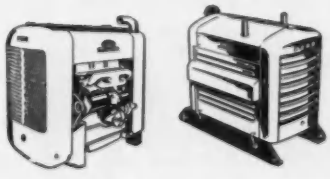
❷ Ford Industrial Engines offer the most advanced and proven benefits derived from the continual research and matchless facilities of Ford's huge engineering staff. For this reason, you're always right up-to-date when you specify Ford Heavy Duty Power for your job—either as original equipment or for replacement.

❸ Ford's network of Industrial Engine Dealers covers the nation! That's a distinct advantage to you as a user of industrial power because it means there is a Ford Industrial Headquarters near you with the facilities needed to properly apply Ford Power. The net result is the right engine installation for your job.

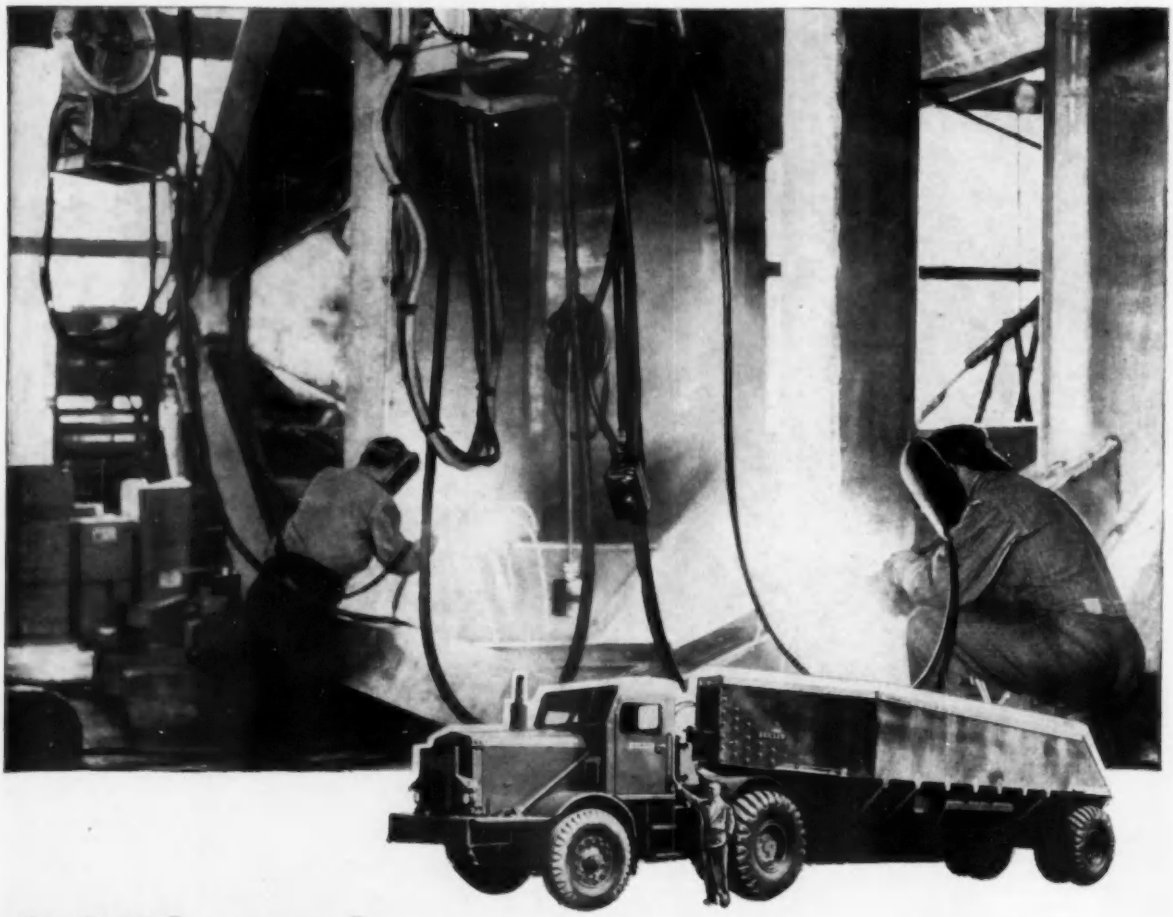
❹ A decided advantage to the user of Ford Industrial Engines on any job is the fact that parts and components are readily available to provide more flexibility of operation. This includes major assemblies such as axles, 3-, 4- and 5-speed transmissions, driveshafts, brakes, springs, wheels, hubs, drums, etc.

❺ Users need never carry large stocks of replacement parts because Ford Industrial Engine service is everywhere. The more commonly purchased parts may be obtained quickly and economically from your nearest Ford Dealer or from many independent shops—wherever the Genuine Ford Parts sign is displayed.

Ford
INDUSTRIAL ENGINES
AND POWER UNITS



INDUSTRIAL ENGINE DEPARTMENT
FORD Division of FORD MOTOR COMPANY
P.O. Box 598, Dearborn, Michigan



33% Lighter...

Sigma Welding helps up truck pay-load 5 tons

The less weight consumed in a truck's structure, the more room there is for the all important pay-load. By sigma welding these giant drop-bottom dump trailers of sturdy aluminum alloy, 8,210 lb. dead-weight has been eliminated —and truck capacity increased 5 tons.

In this operation, sigma rod feed units are suspended above the work area to allow each operator complete freedom of movement with his sigma torch. Sigma welding operations are fast, and finished welds are of highest quality. The 36-ft. long trailers are fabricated of 5/16 and 3/8-in. plate, and 3/8 and 3/4-in. channel extrusions.

Like many other products throughout industry, these trailers are being fabricated with new quality and efficiency using sigma welding with argon shielding. Sigma welding produces smooth, high-quality welds in all type joints, and exceeds 100 in. per min. in many operations. It is an efficient method for joining such metals and alloys as carbon steel, stainless steel, copper, bronze, aluminum, and unalloyed titanium. Start saving now with greater production speed and unit quality—call your local LINDE representative today.

Linde Air Products Company
A Division of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: LINDE AIR PRODUCTS COMPANY
(formerly Dominion Oxygen Company)
Division of Union Carbide Canada Limited, Toronto

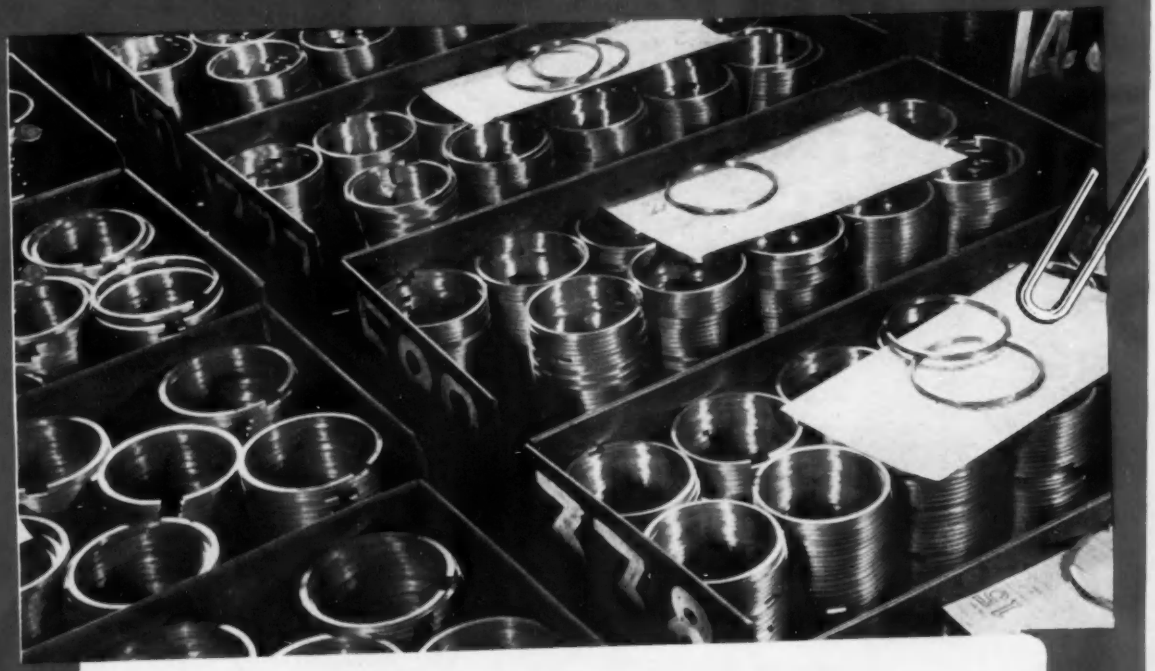
The term "Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

Linde
Trade-Mark

YEAR AFTER YEAR...MODEL AFTER MODEL...

MORE THAN ONE OUT OF THREE CARS

ARE EQUIPPED WITH MUSKEGON PISTON RINGS



BECAUSE MUSKEGON HAS WHAT IT TAKES TO MAKE RINGS BY THE TENS OF MILLIONS!

It takes real capacity to turn out as many rings as Muskegon does – hundreds of thousands daily! Yet, even with this tremendous volume, accuracy is strictly maintained in each and every shipment. An operation of this scope takes facilities. Muskegon is fully equipped to cast and completely finish the rings it makes . . . to carefully handle and quickly produce any ring order in quantity.

With today's demands for an endless variety of piston ring specifications, delivery of quality rings in quantity can be a problem. It isn't at Muskegon – so why not see Muskegon today for your ring requirements? Find out first-hand why more than one out of three cars are equipped with Muskegon Piston Rings.



No matter what the design of the individual rings needed to fill the grooves of your piston, rely on Muskegon as your source.

Since 1921... The engine builders' source!

MUSKEGON Piston Rings

MUSKEGON PISTON RING CO.
MUSKEGON, MICHIGAN
PLANTS AT MUSKEGON AND SPARTA

DETROIT OFFICE:
521 New Center Building
Telephone: Trinity 2-2113

SIMPLIFIED DIESEL FUEL INJECTION AT ITS VERY BEST

The new, lighter, smaller, more compact Roosa Master D Pump offers both the diesel engine manufacturer and user outstanding diesel fuel injection performance, exceptional dependability and low maintenance cost through simplified design and construction.

Designed for use with almost all major types of high speed diesel engines, the Roosa Master Model D is a single cylinder, opposed plunger, inlet metering, distributor type pump.

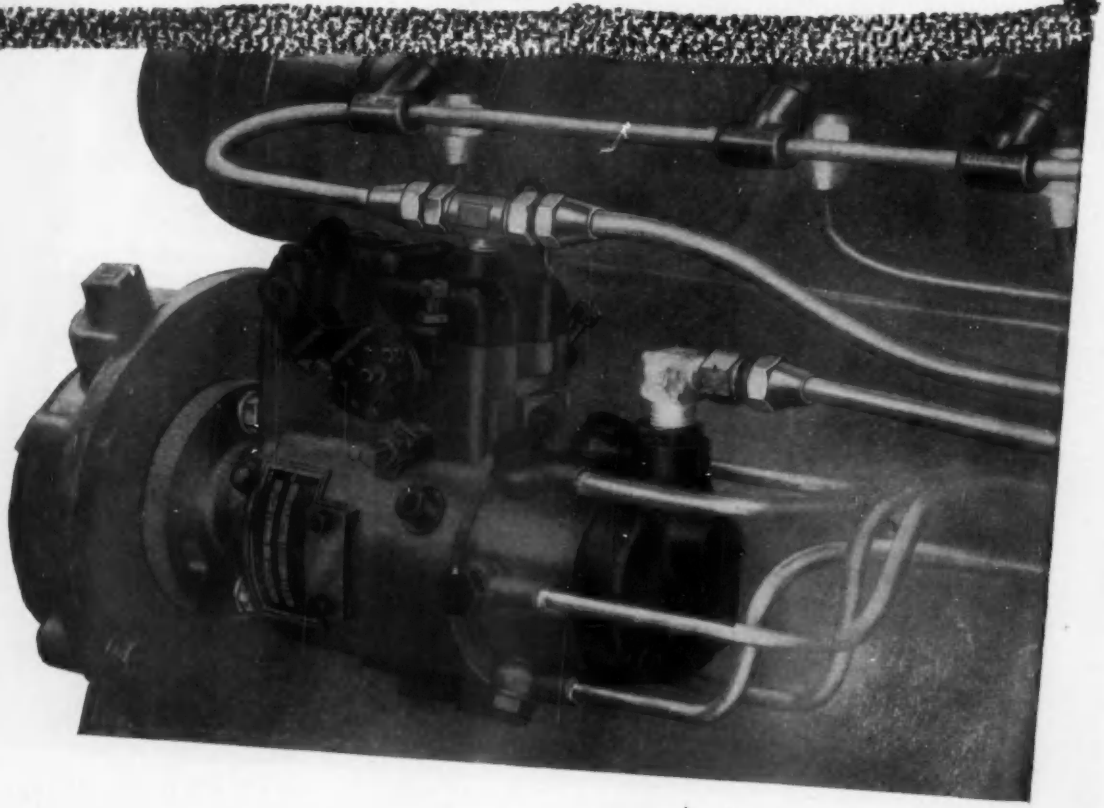
A study and comparison of Roosa Master D Pump features, as described and illustrated in latest "tell-all" folder, now available, will quickly reveal why the Model D **Makes Good Diesels Better!**

Write today for your copy—no obligation

HMS ROOSA MASTER

HARTFORD MACHINE SCREW COMPANY • HARTFORD 2, CONNECTICUT

DIVISION OF STANDARD SCREW COMPANY



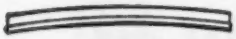
Again in '56...

these LINK-BELT timing chains are standard equipment on many automobiles

As in years past, Link-Belt timing chain is once more the choice of many top automotive design engineers. To show you why — and how much this quiet, compact, smooth-operating chain can mean to your engine's performance — we'll gladly supply a test drive to your specifications. Or, to have full information on file, write for your copy of 36 page Engineering and Specification Data Book 2065.



AUTOMATIC JOINT SNUGNESS



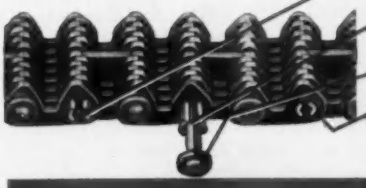
Segmental bushings are made with slight bow.



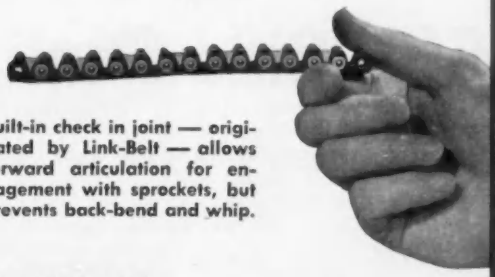
After initial assembly in chain, bushings are straight.



Bow in bushings acts to keep a snug joint on non-load side.



SMOOTHER OPERATION



Built-in check in joint — originated by Link-Belt — allows forward articulation for engagement with sprockets, but prevents back-bend and whip.

LONGER LIFE

- Removable segmental liners or bushings extend across entire chain width—double bearing surface, halve pressure on pin.
- Because bushing takes joint wear, elongation of link hole or eye is negligible.
- Broached holes in links form lock grip for bushings.
- Smooth, case hardened pin is free to rotate between segmental bushings, presents every part of its surface for wear.

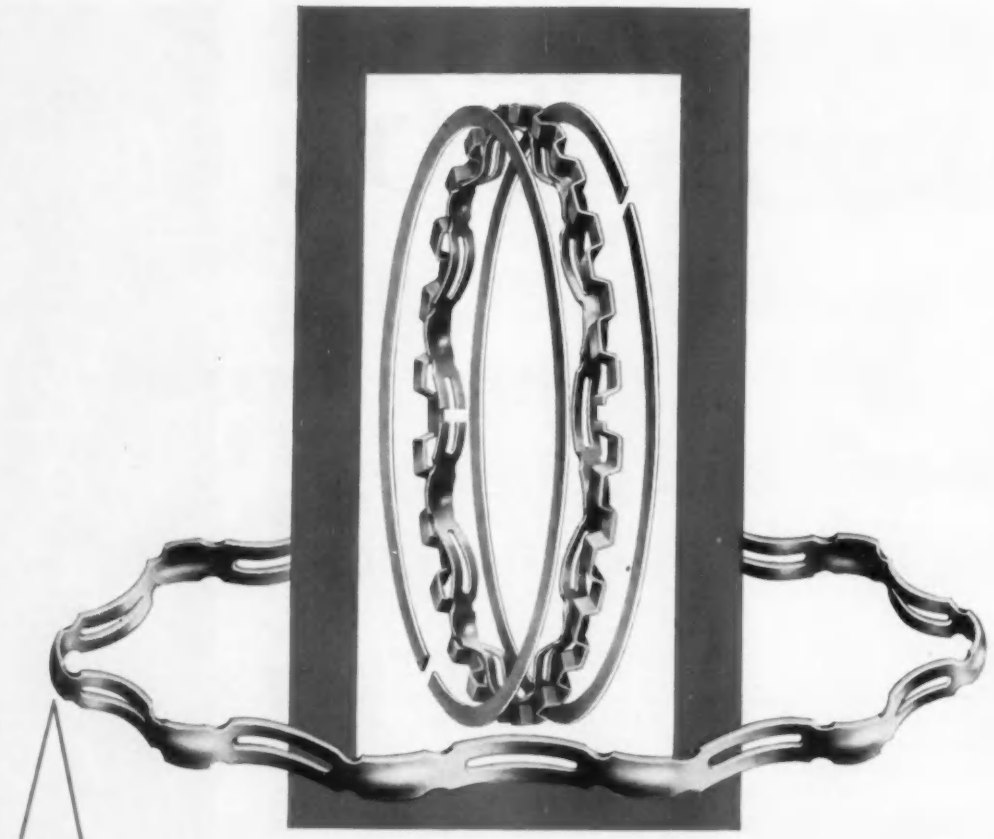
LINK-BELT

THE SYMBOL OF QUALITY — LINK-BELT

14,022

TIMING CHAINS AND SPROCKETS

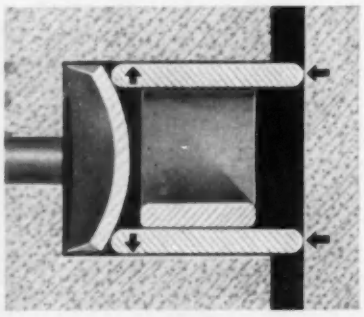
LINK-BELT COMPANY, 220 South Belmont Ave., Indianapolis 6, Ind.



Announcing a new SEALED POWER Engineering Achievement

The CS-50U Side-Sealing Oil Ring

for high-vacuum engines, sets new performance peaks in—



1. SIDE SEALING • Excessive oil cannot escape around the new CS-50U Oil Ring under high vacuum conditions caused by deceleration, because the crowned spring forces side rails snugly against sides of ring groove.

2. OIL DRAINAGE • Adequate oil drainage through the ring is more important than ever. The new spacer is even more resistant to sludging and assures *full flow* of oil through ring and piston vents.

3. LONG LIFE • Heavy chromed rails assure long life—less friction—instant oil control.

4. EASE OF INSTALLATION • Fast and easy to install—keeps assembly cost low.

This ring is already being used as original equipment in certain 1956 models. Ideal for replacement service.

SEALED POWER CORPORATION—MUSKEGON, MICHIGAN—ST. JOHNS, MICHIGAN—ROCHESTER, INDIANA
DETROIT OFFICE—7-236 GENERAL MOTORS BUILDING—PHONE TRINITY 1-3440

Sealed Power Piston Rings

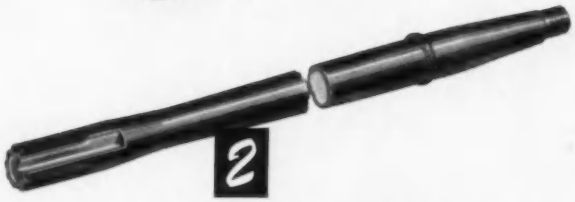
PISTONS • CYLINDER SLEEVES

Leading Manufacturer of Automotive and Industrial Piston Rings Since 1911 • Largest Producers of Sealing Rings for Automatic Transmissions—Power Steering Units

7 WAYS to SAVE MONEY with TOCCO* Induction Hardening



Cost was reduced 94% when heat-treatment of this corn-harvester part was changed from carburizing to TOCCO-hardening, 9½c saved on every piece — $4750 on each 50,000 piece batch, plus an hourly production increase from 120 to 300 pieces per hour.



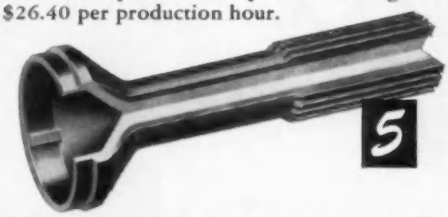
$375 per day! When Salisbury Axle switched to TOCCO-hardening axle shafts. Less machining—30 seconds instead of 2 minutes—means lower tool cost. Also production zoomed from 50 to 120 per hour. TOCCO hardened shafts have 200% greater torsional life.



Kearney & Trecker Corp. reduced the cost of hardening this milling machine part from $1.57 to 10c apiece. In addition TOCCO made possible a switch from alloy to S.A.E. 1045 steel—saving another 11c per piece in material cost. Kearney & Trecker hardens 140 different parts on one TOCCO unit.



Thompson Products Ltd. boosted production of these automotive wrist pins from 500 to 1200 per hour when they switched to TOCCO-hardening. Costs fell from $5.45 to $3.25 per hundred parts—a savings of 2c per pin, $26.40 per production hour.



Mechanics Universal Joint Division of Borg-Warner reports a 69% savings in the hardening of stub ends for propeller shafts. TOCCO also upped production from 35 to 112 parts per hour—over three times as fast as conventional heating methods.

Lima-Hamilton Corporation adopted TOCCO for hardening this shifting lever. Results: a savings of 4c per piece—$25 per production hour. TOCCO costs only 17% of former heating method. This is only 1 of 139 parts TOCCO-hardened by Lima-Hamilton Corp. All show savings over usual heating methods.



7 Number 7—the lucky number—is up to you. Why not add your name to the list of companies who use TOCCO Induction Heating to increase production, improve products and lower costs. TOCCO engineers are ready to survey your plant for similar cost-saving results—without obligation, of course.

THE OHIO CRANKSHAFT COMPANY



TOCCO

*Trade Mark Reg. U. S. Pat. Off.

Mail Coupon Today

NEW FREE BULLETIN

THE OHIO CRANKSHAFT CO.
Dept. H-3, Cleveland 1, Ohio

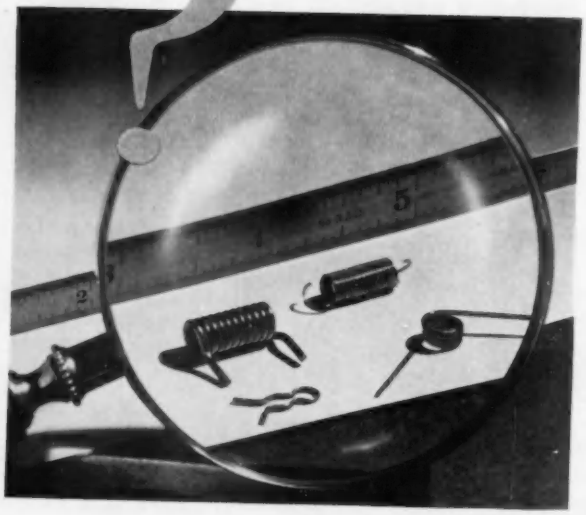
Please send copy of "Typical Results of TOCCO Induction Hardening and Heat Treating."

Name_____
Position_____
Company_____
Address_____
City_____ Zone____ State____

BIG springs?



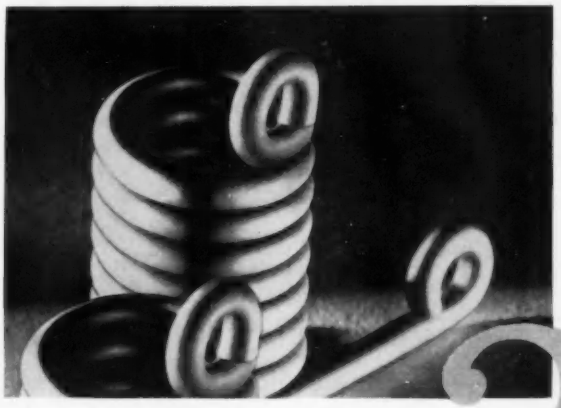
-little springs?



-simple springs?



Get custom-made performance and volume prices with American Quality Springs



-tricky springs?



SOME OF OUR BEST CUSTOMERS still find it hard to believe that American Steel & Wire can turn out such an incredible variety of springs: we make extension springs, compression springs, torsion springs, motor springs, flat spiral springs, flat springs, and wire forms with an endless variety of end formations. Cold wound and heat treated.

Materials? Carbon steel wire, hard drawn, oil tempered and annealed, music wire, chrome-vanadium wire, Stainless Steel, monel, phosphor bronze, brass or just about any other spring metal you can name.

Finishes? Springs can be supplied ground, polished, shot blasted, ball blasted; coated with japan, lacquer, zinc, cadmium, copper, nickel or just about any other material that can possibly be applied.

American Steel & Wire can supply completely fabricated spring assemblies, too. A complete assembly department can produce, *at low cost*, such items as parking brake assemblies.

Take advantage of our complete spring engineering design service, this great range of varieties; get rapid delivery and low prices—with American Quality Springs. Just call your nearest AS&W salesman.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL, GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS

USS AMERICAN QUALITY SPRINGS

UNITED STATES STEEL

7 Year Success Story

YOU'RE YEARS AHEAD WITH

DUALOY*

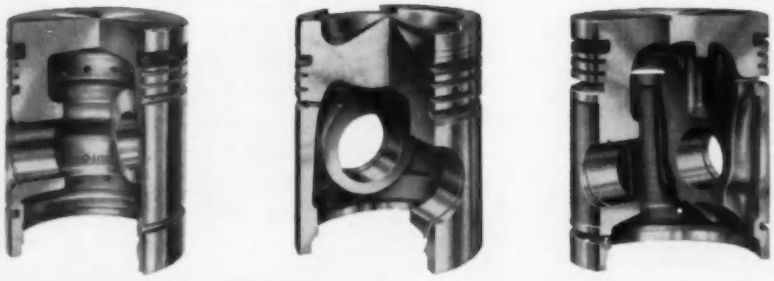
ARMORED RING BAND INSERT PISTONS

Read this Record of Proven Performance

MORE THAN...

7 YEARS of "know-how" and successful production. 1,000,000 DUALOY pistons installed in operating equipment. 2,000,000,000 MILES of heavy-duty highway transport operation—without a failure of the chemically bonded top ring groove insert.

In 1948 the manufacturers of DUALOY designed and developed the 1st successful bimetallic molecular bonded piston. Today it is still the No. 1 heavy duty piston with a full line of heavy duty pistons for all standard engines, bores and oversizes, and to fit all standard sleeve assemblies.



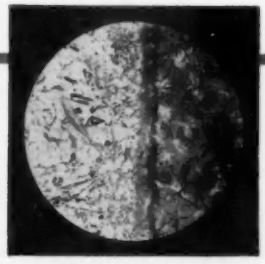


Photo micrograph of DUALOY* bi-metallic molecular bond.



Enlarged cutaway of DUALOY* ni-resist ring groove.

DUALOY **the first name in heavy duty pistons**
the last word in proven performance.

Manufactured by **UNITED ENGINE & MACHINE COMPANY**

310 Preda Street, San Leandro, Calif.

Better Pistons Since 1922

SPECIFY DUALOY PISTONS

DUALOY*

MAKES THE GRADE



1949 DUALOY INSTALLS FIRST PRODUCTION PISTONS IN 2 HIGHWAY TRANSPORT TRUCKS AND 1 HIGHWAY BUS.

1950 First Engine Manufacturer specifies DUALOY as original equipment in Diesel heavy-duty engine.

1951 43 conventional Silv-o-lite pistons now converted to DUALOY numbers. 1st experimental set reaches 200,000 mile mark!

1952 11 fleet owners,—692 transport operators now using DUALOY pistons exclusively in heavy duty rigs.

1953 Bus operator reports on DUALOY pistons installed in 1950. "250,000 miles—no appreciable wear, pistons re-ringed and re-installed."

1954 Operational records now reach 500,000 miles. Fleet-owner reports "Fleet average in excess of 250,000 miles."

1955 153 conventional Silv-o-lite pistons now converted to DUALOY numbers—over 1,000,000 DUALOY pistons sold and installed . . . . .

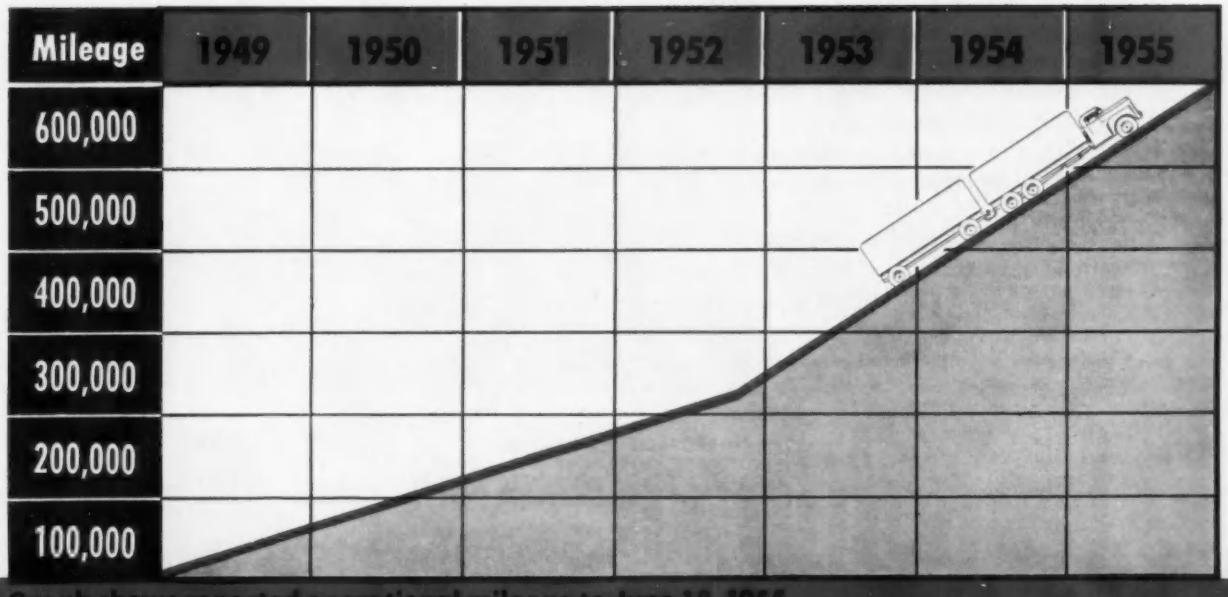
NO FAILURE TO DATE DUE TO EXCESSIVE WEAR IN AREA OF CHEMICALLY BONDED ARMORED RING BAND INSERT.

Better Pistons Since 1922

Manufactured by

UNITED ENGINE & MACHINE COMPANY

310 Preda Street, San Leandro, Calif.



Graph shows reported operational mileage to June 18, 1955

AVAILABLE FOR YOUR ENGINES

insist on frenchtown insulators

...heart of the spark plug!



Year after year, more than 12,000,000 spark plug insulators are shipped from the kilns at FRENCHTOWN to spark plug manufacturers all over the nation.

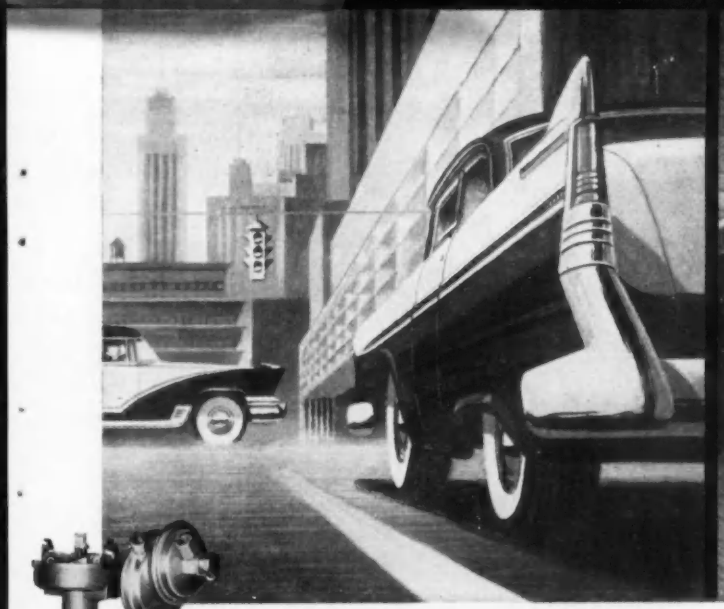
As the world's largest *independent* producer of spark plug porcelains since 1914, there are many reasons for the widespread acceptance of FRENCHTOWN products. Quality control is one.

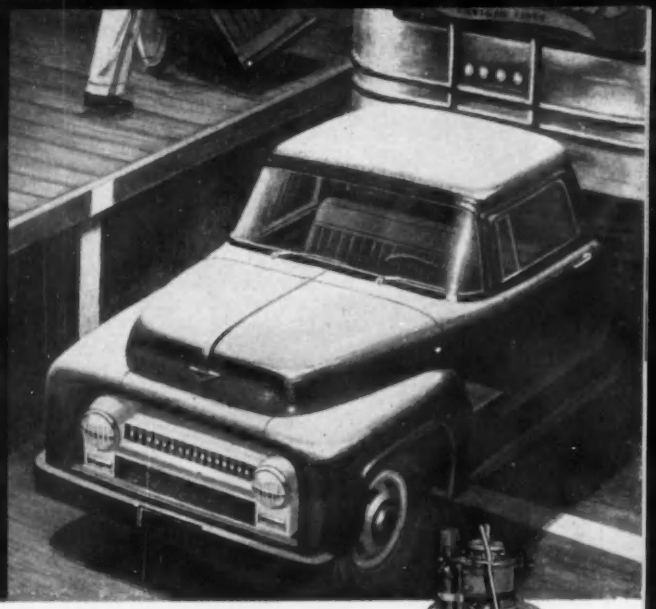
For example, *every* FRENCHTOWN insulator is subjected to a rigid dielectric test (30,000 volts at 1.5 megacycles) . . . *every* insulator must pass an exacting surface inspection before and after glazing. These and other quality control measures which extend throughout all manufacturing processes help give FRENCHTOWN porcelain products the excellent dielectric and mechanical strength so essential in high voltage insulation.

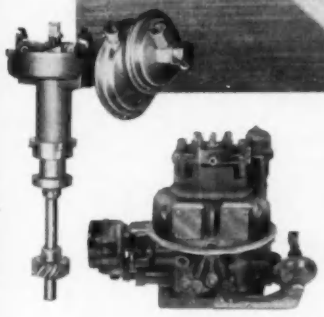
Your best assurance of customer satisfaction is to be sure that the spark plugs you make are made with FRENCHTOWN insulators. They are used by more spark plug manufacturers than those of any other independent maker of insulators.

frenchtown PORCELAIN COMPANY

81 MUIRHEAD AVENUE | TRENTON 9, NEW JERSEY

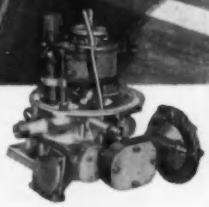






IN AUTOMOBILES—over 10 million of them—you'll find Holley carburetors and distributors. Holley's outstanding record of "firsts" in this field includes the 4-barrel carburetor with vacuum controlled secondary barrels.

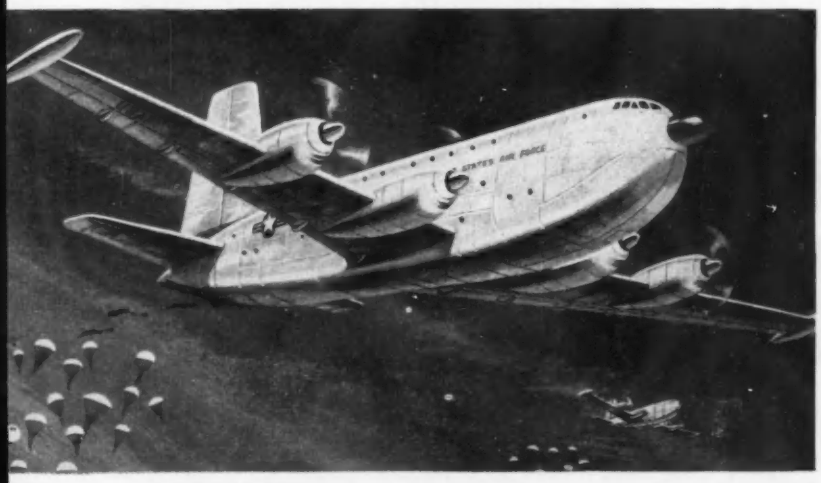
IN TRUCKS. More of America's truck engines are Holley carburetor equipped today than are equipped with any other carburetor. Leading truck manufacturers combine Holley's carburetor, distributor and governor for an integrally-designed control system which provides maximum power and maximum economy features.





Engine Control Systems by Holley

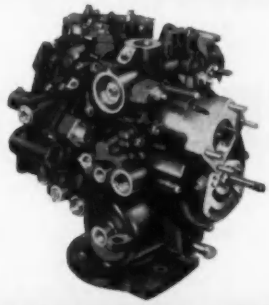
"Mechanical Brains" to Control the Power of the Engines of America



Effective control of engine power is not a simple process of fuel metering—rather it is a problem of co-ordinating the many variables in such a way that the pilot's or driver's demand is instantly satisfied in the optimum manner.

For over half a century, Holley has supplied control systems to harness the power of automobile, truck and aviation engines of all types. Holley carburetors and distributors for automobiles and trucks, and turbine controls for jet aircraft provide maximum efficiency and minimum operating costs for today's engines.

Wherever control systems are needed — for auxiliary or main power plants — Holley's half a century of design, engineering and manufacturing experience can best meet your requirements.



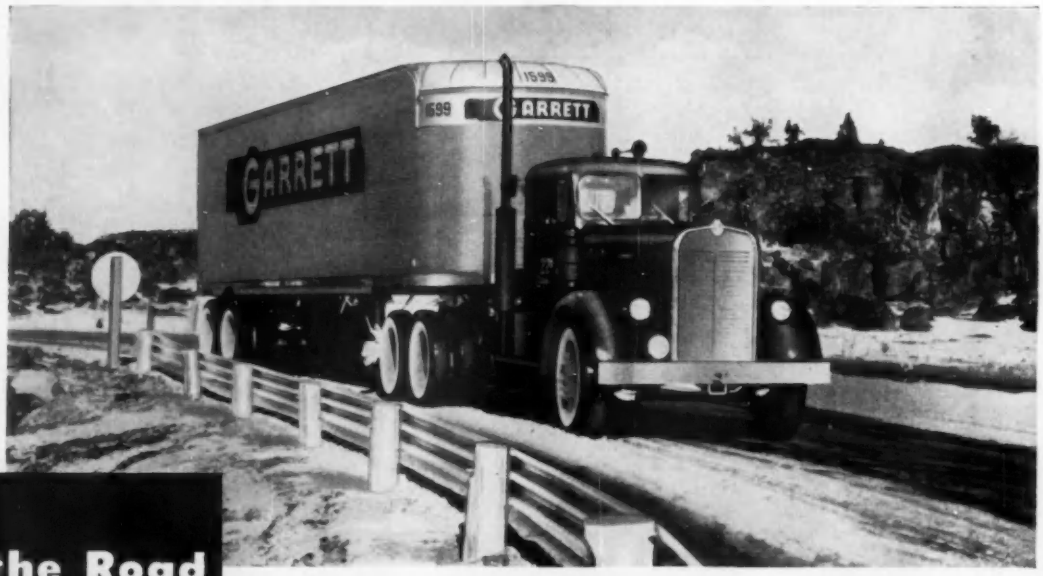
IN AIRCRAFT—jet fighters, bombers, and huge airliners of the future—power control systems by Holley automatically make engine adjustments for busy pilots.

HOLLEY Carburetor Co.

FOR MORE THAN HALF A CENTURY —ORIGINAL EQUIPMENT MANUFACTURERS FOR THE AUTOMOTIVE INDUSTRY.

11955 E. Nine Mile Road, Van Dyke, Michigan

I-24



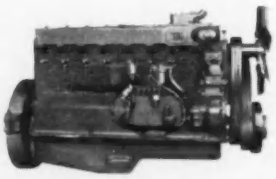
On the Road . . . . . It's Allis-Chalmers Engines for Low-Cost Hauling

Your trucks will operate at lower over-all cost and with less maintenance when powered by Allis-Chalmers engines. There's a diesel or LPG engine up to 350 hp for every application — fast, overland hauls . . . slow, jolting off-highway work.

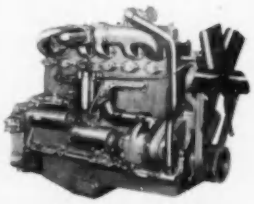
Why not investigate their advantages and performance records? Find out how an Allis-Chalmers engine makes a good truck even better.

Model	Bore and Stroke	Displ. Cu In	Max. Torque RPM	Hp at Max. Speed
8DAS-1125*	5¼ x 6½	1125	960 @ 1450	350 @ 2100
8DA-1125	5¼ x 6½	1125	800 @ 1100	287 @ 2100
6DAS-844*	5¼ x 6½	844	780 @ 1550	280 @ 2100
6DA-844	5¼ x 6½	844	650 @ 1300	215 @ 2100
6DA-779	5¼ x 6	779	540 @ 1400	185 @ 2100
6DA-273	3¾ x 4⅛	273	206 @ 1600	86 @ 2600

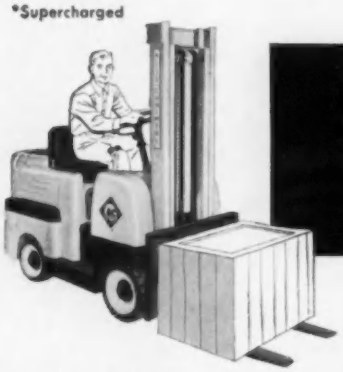
*Supercharged



8DAS-1125 — (Supercharged) 350 hp



6DA-779 — 185 hp



At the Terminal . . . . . It's Allis-Chalmers Fork Trucks for Low-Cost Handling

Allis-Chalmers Fork Trucks are noted for their ability to work many thousands of hours without major attention, and to get back on the job quickly when servicing is required. There is a complete range of models — gasoline, gas and diesel — with capacities to 7,500 lb. They are available with standard transmission or torque converter drive.

Get all the facts from your Allis-Chalmers Buda Division dealer.

ALLIS-CHALMERS, BUDA DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

Marman Clamps Simplify Installation and Servicing of Engine Accessories





The two Marman clamps on this engine air cleaner show how Marman simplifies fastening and joining problems. The "T" bolt clamp holds the cleaner securely in place yet uncouples quickly for servicing. The universal band clamp below it couples the cleaner to the flexible air duct, simply, securely, inexpensively.

Marman's complete line of straps, clamps and couplings have limitless applications for fastening, positioning, joining and sealing engine components and accessories. Let Marman simplify your design and production problems. Write today for full information.

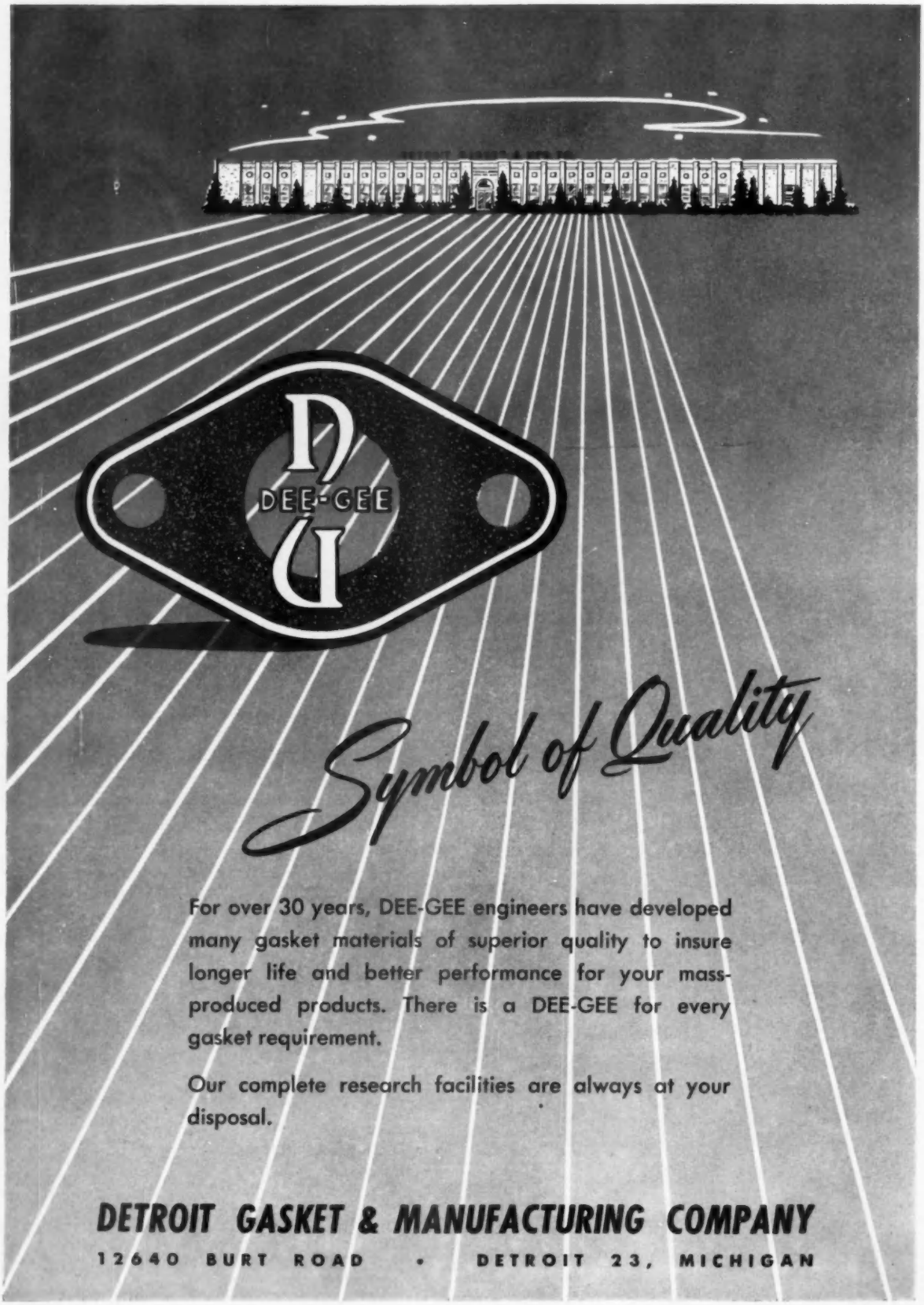
MARMAN PRODUCTS COMPANY, INC.

A SUBSIDIARY OF Aeroquip CORPORATION

11214 EXPOSITION BLVD., LOS ANGELES, CALIFORNIA

IN CANADA: AEROQUIP (CANADA) LTD., TORONTO 15, ONTARIO

MARMAN PRODUCTS ARE MANUFACTURED UNDER VARIOUS U.S., CANADIAN AND FOREIGN PATENTS AND OTHER PATENTS PENDING


DEE-GEE
Symbol of Quality
For over 30 years, DEE-GEE engineers have developed many gasket materials of superior quality to insure longer life and better performance for your mass-produced products. There is a DEE-GEE for every gasket requirement.
Our complete research facilities are always at your disposal.
DETROIT GASKET & MANUFACTURING COMPANY
12640 BURT ROAD • DETROIT 23, MICHIGAN

NEW

NEW

NEW

ESPECIALLY DESIGNED FOR TOP RING GROOVE PROTECTION IN PISTONS FOR GASOLINE ENGINES

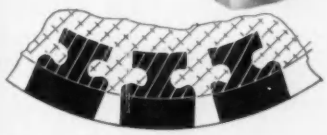
AN ECONOMICAL METHOD WITH MINIMUM WEIGHT INCREASE

CAN BE APPLIED TO ANY TYPE ALUMINUM ALLOY PISTON



PERMA-GROOVE*

WITH SEGMENTAL STEEL TOP RING SECTION



TOP RING SECTION



FRONT VIEW SECTION



CROSS SECTION

Again, Zollner engineering leadership provides another great piston development to engine builders. The new Zollner "Perma-Groove" gives sensationally longer life to pistons and rings, prevents blow-by, minimizes oil consumption. The light weight segmental steel section incorporates high wear resistance in the top ring groove *plus* the advantage of cool operation. Designed especially for gasoline engine pistons, "Perma-Groove" is the quality, low-weight and low-cost companion to the popular "Bond-O-Loc" piston for Diesel engines. We suggest an immediate test of "Perma-Groove" advantages for your gasoline engine.

*T. M. Reg. Pat. App. For

OUTSTANDING ADVANTAGES OF ZOLLNER "PERMA-GROOVE" TOP RING SECTION

1. Individual steel segments eliminate continuous band expansion problem.
2. Segments securely locked to prevent radial movement.
3. Dovetailed edges keep steel segments securely in plane with groove.
4. 75% steel bearing area for wear resistance.
5. 25% aluminum bearing area for heat conductivity and cool operation.
6. Light in weight.

ADVANCED ENGINEERING

PRECISION PRODUCTION

COOPERATION WITH ENGINE BUILDERS

ZOLLNER PISTONS

THE ORIGINAL EQUIPMENT PISTONS

ZOLLNER

ZOLLNER CORPORATION • Fort Wayne, Indiana

"Firm" Basis for leadership!



ALLIS-CHALMERS · MASSEY-HARRIS · MM MODERN MACHINERY · IH · Sheppard · Ford · KENWORTH · EUCLID · Autocar · HOBART · Onan PRODUCTS · Mack · BUCYRUS ERIE · FERGUSON · P&H · CUMMINS · WAUKESHA · Caterpillar · CHRYSLER · GMC · John Deere · Jeep · COCKSHUTT FARM EQUIPMENT · MURPHY DIESEL · WISCONSIN MOTORS · HERCULES · Continental Motors Corporation · Sterling · GLEANER · NEW HOLLAND · OLIVER · CLARK · LE ROI · White · JOY · BUDA · WOOD · REO

These leading firms, and many more, have chosen Donaldson Air Cleaners to protect their engines against dust.

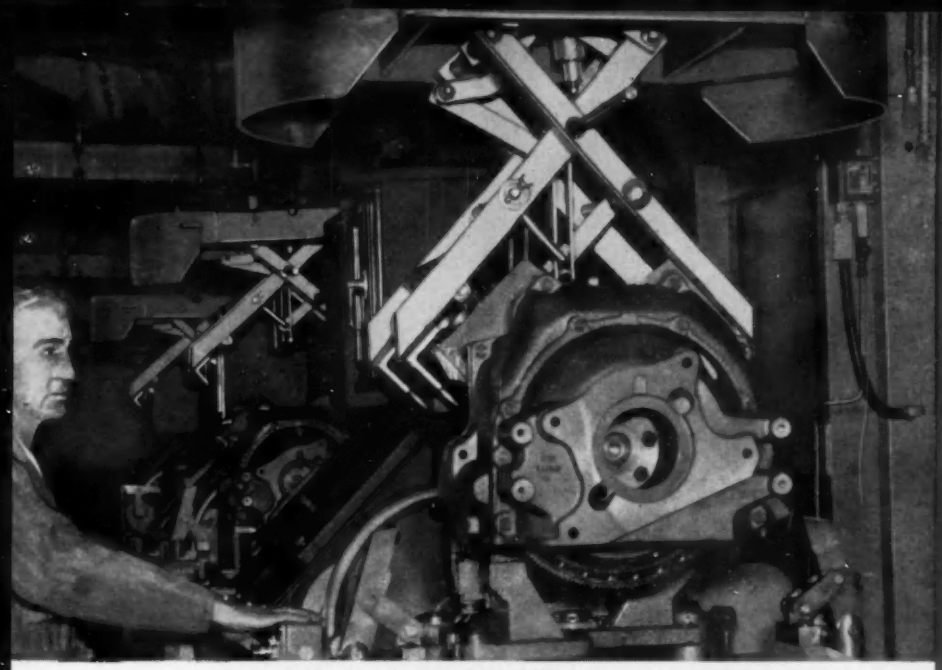
For the tractors, trucks and other equipment which these engines power, Donaldson Air Cleaners assure high-level performance *longer!*

This long-life protection and "follow-through" service have made the Donaldson Company the world leader in heavy-duty air cleaners.

DONALDSON COMPANY, INC.
666 Pelham Blvd., St. Paul 4, Minnesota

Donaldson

AIR CLEANERS
MUFFLERS



Over 100 pairs of Heppenstall Safe-T-Tongs are carried by a modern power-and-free conveyor on a prominent automobile producer's assembly line. They pick up partially assembled engine blocks and deliver them to machines which drill their crankshaft area. Next, the tongs lift the blocks and transport them to the following operation.

Heppenstall automatic Safe-T-Tongs, custom built to your individual needs, speed handling, eliminate safety hazards

Heppenstall's fully-automatic Safe-T-Tongs are today's answer to many difficult material handling problems encountered in "automated" production set-ups. Requiring no power, they operate merely by being lowered on the burden to be lifted. They go through their entire cycle of automatic operation quickly, safely, accurately and efficiently.

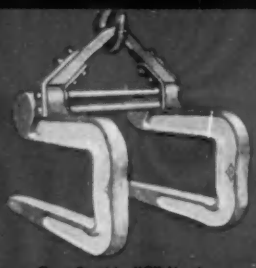
Safe-T-Tongs are also widely used in the automotive industry where individual lifts of materials are handled by hoist or crane. They do not require any rigging or chains on the load to be lifted, nor ground chainmen — thus eliminating potential safety hazards. Your craneman does the entire job, either from his cab or by remote control.

Whatever your particular handling jobs require — regardless of shapes, weights or sizes — Heppenstall tongs, engineered specially to your individual needs, will help you economically speed materials handling operations with greater efficiency and safety.

For complete information and technical assistance contact Heppenstall Company, New Brighton, Pa. Sales offices and representatives are located in principal industrial centers.

Heppenstall

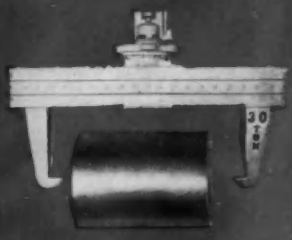
. . . tongs for every automotive lifting problem



Cast Double "C" Hook



Single "C" Hook



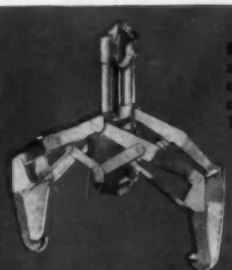
Motorized Rotating Horizontal Coil Tong



Single Vertical Coil Tong

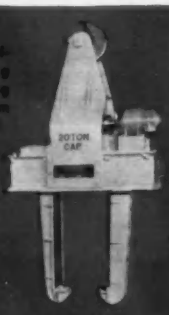


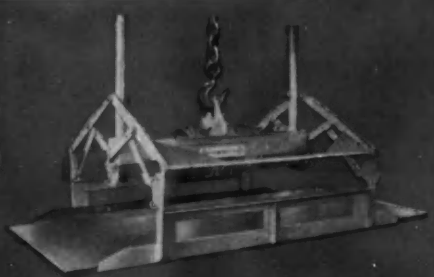
Motorized Rotating Crane Hook



Motorized Horizontal Coil Tong

Rack and Pinion Horizontal Coil Tong capable of handling coil widths from 19½ to 52 inches





Motorized and Manually Operated Sheet Lifters



Engineered FOR THE Tough Jobs

....CONTINENTAL RED SEAL POWER



The new 4-wheel drive Oshkosh 50-50 ready-mixed concrete carrier is built to haul up to 5 cubic yards legally, with enough water for ready-mixed concrete operations. Its Continental Red Seal B6427 engine is cantilevered forward of the front wheels, distributing the load equally between the two axles, and making the unit conform to maximum load limits in most states . . . Continental F4162 engine driving the 4½ cu. yd. Rex Adjusta-Wate Moto-Mixer is mounted at rear of the machine, making possible the most efficient load distribution over all axles, for carrying maximum payload.

When it comes to tough jobs, the hauling of ready-mixed concrete ranks well toward the top of the list. It takes a real engine merely to move such a monster as this, to say nothing of lugging it over all sorts of terrain in order to spot the load. Continentals have been known for dependability for more than half a century. Their famous in-built stamina is earning them a place in more and more of today's heavy-duty equipment, not only in transportation but in industry and farming as well. Every Continental Red Seal is built for the job in which you find it—and backed by service and parts facilities coast to coast.

OPPORTUNITIES FOR ENGINEERS
Continental Motors and its subsidiaries have numerous openings for engineering personnel interested in challenging careers in gas turbine and reciprocating engine development. For information, address Engineering Personnel Dept., 12800 Kercheval Ave., Detroit 15, Mich.

Continental Motors Corporation

MUSKEGON • MICHIGAN

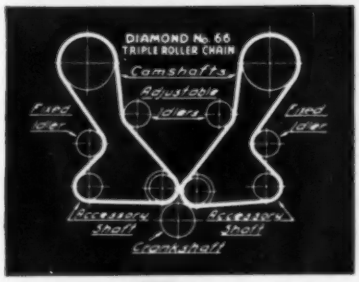
CONTINENTAL MOTORS ® Powerful as the Nation AMERICA'S STANDARD

6 EAST 45TH STREET, NEW YORK 17, NEW YORK • 6218 CEDAR SPRINGS ROAD, DALLAS 9, TEXAS • 3817 SOUTH SANTA FE AVENUE, LOS ANGELES 58, CALIFORNIA • 1252 OAKLEIGH DRIVE, EAST POINT (ATLANTA) GEORGIA

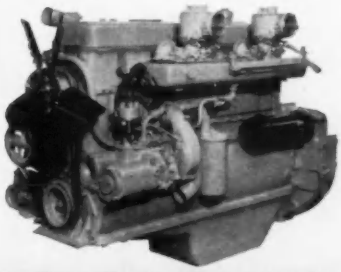
FOR BETTER PERFORMANCE—AND ECONOMY

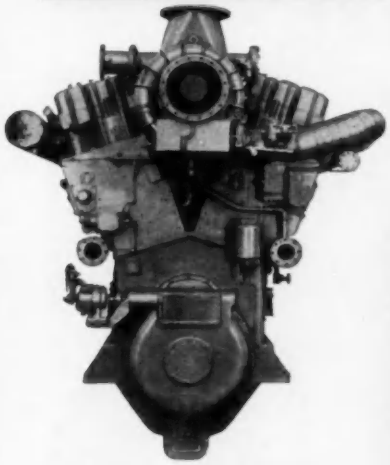
DIAMOND ROLLER CHAINS

TIMING AND AUXILIARY ENGINE DRIVES

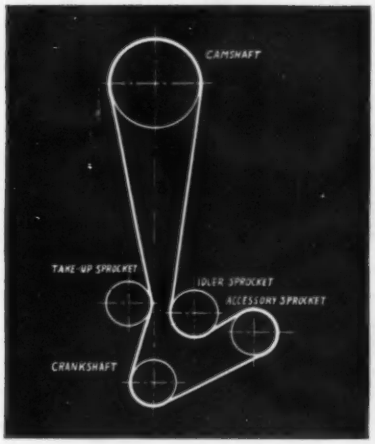


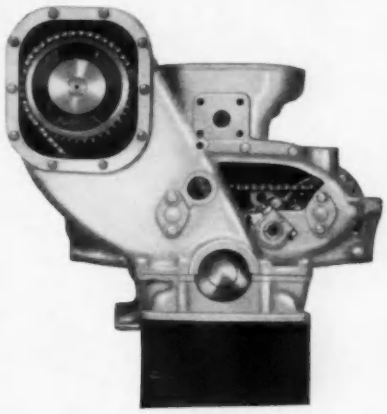
The new Hall-Scott 590 six cylinder truck engine, available for gasoline or LPG, delivers over 200 horsepower, weighs less than 1,300 pounds and is under 50 inches in overall length. 182 pitches of Diamond No. 82 quadruple-strand Roller Chain drive the overhead camshaft as shown below.





On the Cooper-Bessemer L.S.V. Engine, Diamond No. 470 quadruple Chain is installed from the timing drive camshaft to intermediate shaft and Diamond No. 148 for the auxiliary drive.





Hercules Diesel engine D00 four cylinder and gas engine QXLD-3 six cylinder have:—Diamond Double No. 66 Roller Chain from crankshaft to pump shaft. Single No. 66 for fuel oil pump drive.



Twin Coach buses and Super Freighters are powered by Fageol engines (gasoline or propane) equipped with Diamond Chain Quad #82 Roller Chain timing drives.

• For over a quarter century the use of Diamond Roller Chains has included many applications on all types of engines: — gas, gasoline, diesel and dual-fuel up to 5000 h.p. and at speeds as high as 10,000 r.p.m. in stationary, marine and land transportation service. Wide usage has demonstrated their unmatched long-life reliability, high maintained efficiency and smoothness of operation. Efficiency remains practically the same throughout long service. The finish of working surfaces improves with scarcely measurable wear.

And These Definite Diamond Advantages

1. Adaptability to wide range of shaft centers, speeds, and ratios.
2. Drive from either face.
3. Create no end play.
4. Make close shaft centers and clearance tolerances unnecessary.
5. Quiet when installed — Remain quiet.
6. Low in first and final cost.

DIAMOND CHAIN COMPANY, Inc.
626 Kentucky Avenue, Indianapolis 7, Indiana

Diamond Engineers offer complete design and application service.

ALWAYS PRELOADED

For many, many years, Diamond Chain has been preloaded after assembly for the purpose of bringing pin-bushing seating into stabilized relationship prior to field installation.

SHOT-PEENING SINCE 1944

Diamond Chain has long recognized that certain types of internal stressing of chain parts would increase fatigue resistance. To this end, link plates have been specially processed and chain rollers and other parts have been shot-peened since 1944

DIAMOND ROLLER CHAINS

new LONG LIFE PISTON



Puts CAST IRON WEAR IN TOP RING GROOVE

G and E Wire Insert Piston before machining (left) and after ring grooves are cut (right) showing how the steel wire forms a tough wear-resistant surface on both faces of top ring groove. The ferrous plug molded in the head (for diesel pistons) prevents burning through head and lengthens diesel piston life!

G and E WIRE INSERT PISTONS

- ★ Low initial cost
- ★ Light weight
- ★ Amazing increase in piston life
- ★ Maintains new engine power and performance

This Gillett & Eaton exclusive steel wire insert is cast right into the alloy piston to make hard surfaces for the top ring groove. Here's an entirely new piston design combining all the advantages of aluminum alloy with the long life of steel wire bearing surfaces in the top ring groove. No noticeable increase in weight. G and E Wire Insert Pistons are real top performers at Low Cost—barely more than ordinary alloy pistons!

When the grooves are machined, the closely spaced steel wire inserts cast in the piston become hard bearing surfaces on top and bottom faces of the groove. The wire insert also strengthens the second ringland.

Engines fitted with Gillett & Eaton Wire Insert Pistons *maintain* new engine power and performance much longer because top ring groove wear is reduced to a minimum. Build extra volume and profits at Low Cost with Gillett & Eaton Wire Insert Pistons.

GET THE G AND E WIRE INSERT STORY—Send your specifications and requirements—let us quote you.

GILLETT AND EATON, INC. 841 DOUGHTY STREET • LAKE CITY, MINN.

G&E

ESTABLISHED 1868

HOOF Governors

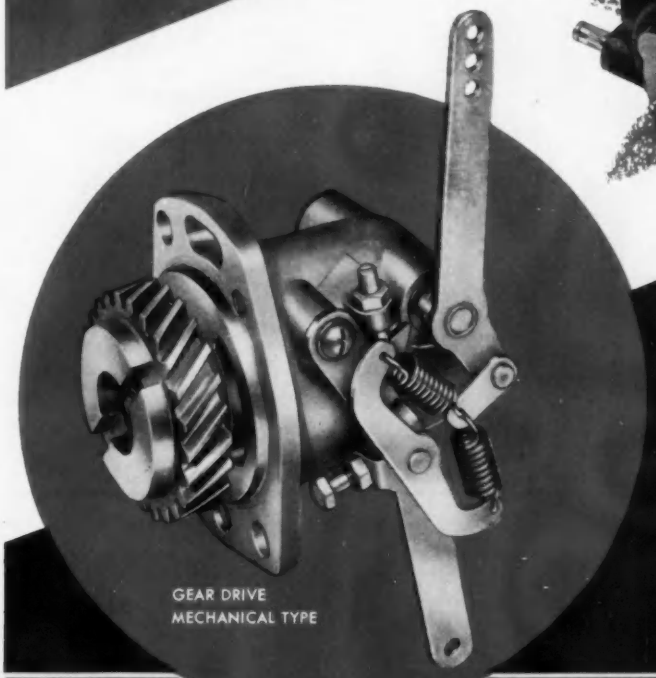


VELOCITY TYPE

VELOCITY TYPE

Exclusive, patented Cantilever Spring gives more accurate speed control and longer life. Trouble-free (diaphragm type) anti-cheat mechanism. Each governor individually tested on dynamometer and pre-set to manufacturer's specifications before shipping.


BELT DRIVE
MECHANICAL
TYPE


GEAR DRIVE
MECHANICAL TYPE

MECHANICAL TYPE

In their many industrial applications, Hoof mechanical governors provide close regulation regardless of load conditions over wide operating range. These units feature ball or roller bearings at all load points; large oil capacity to eliminate daily oiling and a light, sturdy actuating lever to assure maximum freedom from surging.

Hoof Governors, Velocity and Centrifugal Types • Hydraulic Valves for Aircraft

Your Correspondence Is Invited

HOOF PRODUCTS CO.

6543 S. LARAMIE AVE., CHICAGO 38, ILLINOIS

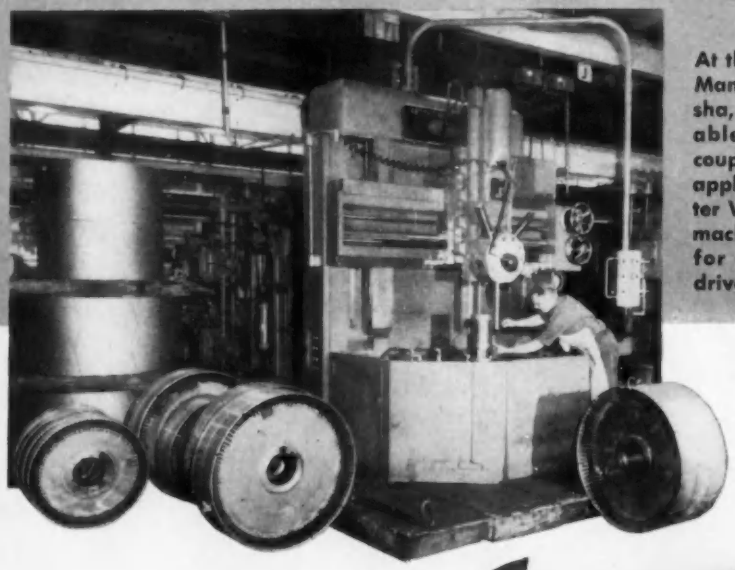
Less machining time and less spoilage

Results in 30% increase in production

With a.. BULLARD ...

CUT MASTER V. T. L.

MODEL 75

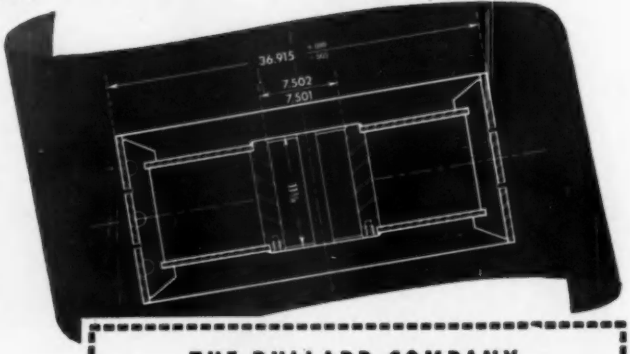


At the Dynamatic Division of Eaton Manufacturing Company at Kenosha, Wisconsin, producers of adjustable speed eddy-current drives, couplings and brakes for industrial applications, the Bullard Cut Master V.T.L., Model 75 is employed to machine the clutch rotor assembly for a big industrial punch press drive.

OPERATIONS

FIRST CHUCKING
1ST FACE HUB
2ND ROUGH & FINISH BORE
7.502" to 7.501"

SECOND CHUCKING
1ST FACE RIM
2ND ROUGH AND FINISH O.D.
36.915 +.000 —.002



Both operator and management praise the performance of the Cut Master, Model 75, "there's no comparison; the old machines I had to fight . . . this one holds once it is set. Setting up is easier and the controls are handy . . . it is easy to keep up work standards with a minimum of spoilage." The advantages embodied in the Bullard Cut Master V.T.L., Model 75 can be applied to your machining problems.

CALL YOUR NEAREST BULLARD SALES OFFICE OR DISTRIBUTOR OR SEND FOR COMPLETE CATALOG TO

THE BULLARD COMPANY
286 CANFIELD AVENUE — BRIDGEPORT 2, CONNECTICUT
Please send me a copy of the
NEW CUT MASTER V.T.L., MODEL 75 CATALOG

NAME _____

COMPANY _____ POSITION _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

INDUSTRY ECONOMIC SECTION



FINANCIAL

INDUSTRIAL PRODUCTION

EMPLOYMENT

WAGES

CONSUMER PRICES

WHOLESALE PRICES

MACHINE TOOLS

MATERIALS

SPECIFICATIONS . . . INDUSTRIAL TRUCKS

DIRECTORY OF MANUFACTURERS

AI
AUTOMOTIVE INDUSTRIES
38TH
ANNUAL STATISTICAL ISSUE 1956

Speed up the job with the –

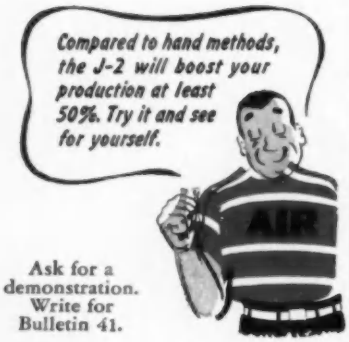
NEW ROTOR IMPACT WRENCH



FAST. Powerful air tool. 2100 solid blows per minute set nuts in a hurry. Reversible for removing nuts.

NON-FATIGUING. Weighs only 3 lbs. Well balanced. No stalling shock. No twist.

LOW MAINTENANCE. Fewer parts . . . some interchangeable . . . some reversible. Steel clutch housing. Rugged throughout.



Ask for a demonstration. Write for Bulletin 41.

SPECIFICATIONS

MODELS	Blows per Minute	Length	Weight	Square Drive*	Side to Center	Hose Connection	Rated Capacity. (Bolt Size)
 J-2-S Side Handle	2100	6"	3#	½"	1⅛"	¼"	¼"
 J-2-L Lever Handle	2100	7¾"	3¼#	½"	1⅛"	¼"	¼"

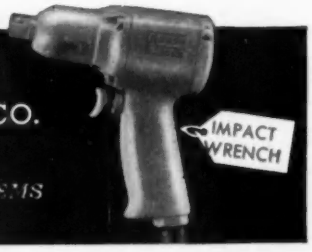
*⅜" square drive or ⅞" Quick-Change Chuck is optional.



THE ROTOR TOOL CO.

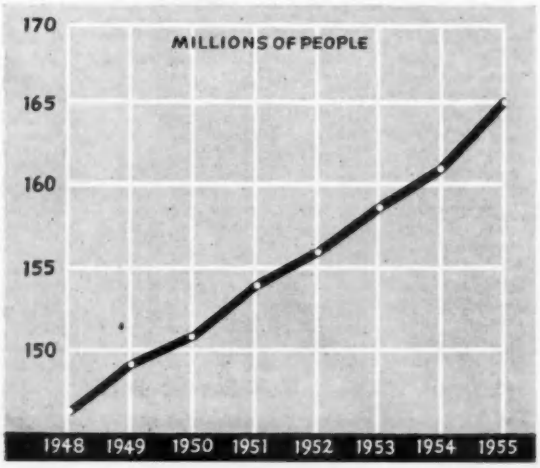
CLEVELAND, OHIO

UNBIASED ANALYSIS OF PORTABLE TOOL PROBLEMS

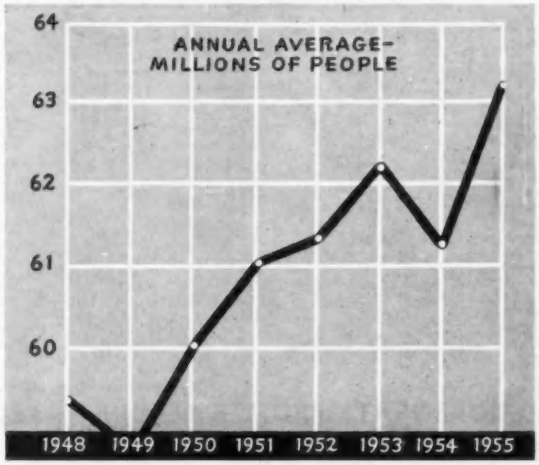


Significant Indicators of the U. S. Economy

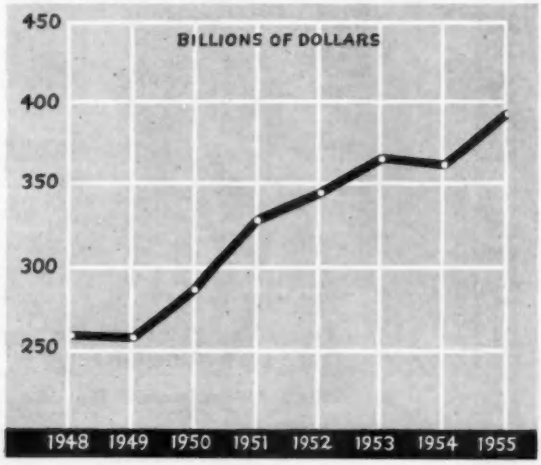
U.S. POPULATION



TOTAL EMPLOYMENT



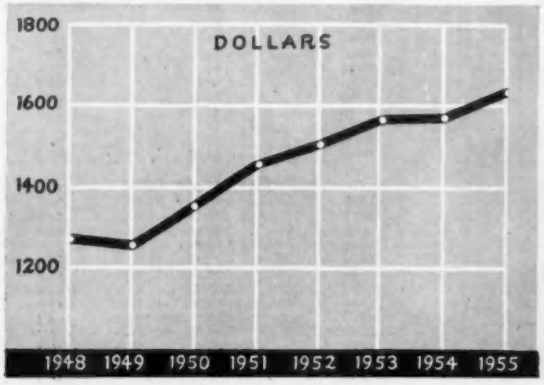
GROSS NATIONAL PRODUCT



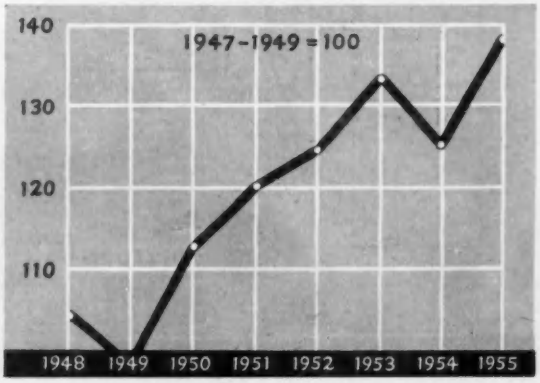
MANUFACTURING EXPENDITURES on New Plants and Equipment



PER CAPITA PAYMENTS



INDUSTRIAL PRODUCTION





FINANCE

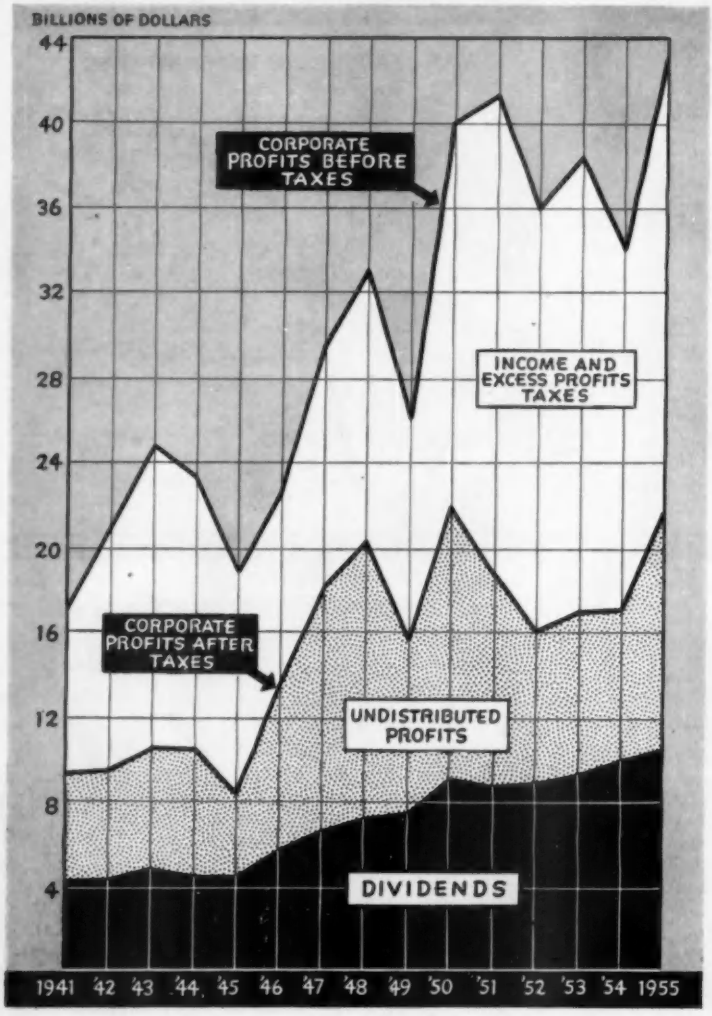
Corporate Profits Before and After Taxes

National Income Division, Department of Commerce

(In Billions of Dollars)

Year	Corporate Profits Before Taxes	Income and Excess Profit Taxes	Corporate Profits After Taxes	Corporate Dividends	Undistributed Corporate Profits
1940	$ 9.3	$ 2.8	$ 6.5	$ 4.0	$ 2.5
1941	17.0	7.6	9.4	4.5	4.9
1942	20.9	11.4	9.5	4.3	5.2
1943	24.6	14.1	10.5	4.5	6.0
1944	23.3	12.9	10.4	4.7	5.7
1945	19.0	10.7	8.3	4.7	3.6
1946	22.5	9.1	13.4	5.8	7.6
1947	29.5	11.3	18.2	6.5	11.7
1948	32.8	12.5	20.3	7.2	13.1
1949	26.2	10.4	15.8	7.5	8.3
1950	40.0	17.8	22.1	9.2	12.9
1951	41.2	22.5	18.7	9.1	9.6
1952	35.9	19.8	16.1	9.0	7.1
1953	38.3	21.3	17.0	9.3	7.7
1954	34.0	17.1	17.0	10.0	7.0
1955 (Est.)	43.4	21.8	21.6	11.2	10.4

CORPORATE PROFITS BEFORE TAXES UP 27%



Federal Government Finance

Receipts, Expenditures, Gross Debt
In Millions of Dollars

Fiscal Year	Net Receipts	Expenditures	Gross Debt†
1941	$ 7,103	$13,262	$ 55,232
1942	12,555	34,046	76,991
1943	21,987	79,407	140,796
1944	43,635	95,059	202,626
1945	44,475	98,416	259,115
1946	39,771	60,448	269,898
1947	39,786	39,032	258,376
1948	41,488	32,069	252,366
1949	37,696	39,507	252,798
1950	36,495	39,617	257,377
1951	47,568	44,058	255,251
1952	61,757	65,773	259,151
1953	64,596	73,985	266,123
1954	64,654	67,772	271,341
1955	60,389	64,568	274,416

†—Includes guaranteed obligations.

U. S. Savings Bonds

In Millions of Dollars

	Amount Outstanding*	Sales	Redemptions
Jan.	$58,456	$ 742	$ 772
Feb.	58,605	602	543
Mar.	58,701	614	605
Apr.	58,639	535	682
May	58,641	488	581
June	58,643	496	619
July	58,672	494	589
Aug.	58,703	487	543
Sept.	58,532	462	722
Oct.	58,494	451	574
Nov.	58,501	438	526
Dec.	58,548	466	545
Total		$6,275	$7,301
1954	$58,358	$6,173	$6,987
1953	57,934	4,797	5,728
1952	58,046	4,161	5,076
1951	57,739	3,960	5,652
1950	58,248	6,074	5,844
1949	56,910	5,833	5,100
1948	55,197	7,295	5,148
1947	52,174	6,694	5,124

*—End of year or month.

Purchasing Power of the 1947-49 Dollar

Office of Business Economics, Dept. of Commerce

	As Measured by		
1955	Wholesale Prices	Consumer Prices	Retail Food Prices
Jan.	90.8	87.5	90.4
Feb.	90.6	87.5	90.3
Mar.	90.9	87.5	90.3
Apr.	90.5	87.6	89.9
May	91.0	87.6	90.0
June	89.7	87.4	89.3
July	90.5	87.2	89.2
Aug.	90.2	87.3	89.9
Sept.	89.5	87.0	89.6
Oct.	89.6	87.0	90.3
Nov.	89.9	87.0	91.1
Dec.	89.8	87.2	91.3
Monthly Averages			
1955	90.2	87.3	90.2
1954	90.7	87.1	88.8
1953	90.8	87.4	88.7
1952	89.6	88.1	87.3
1951	87.1	90.1	88.6
1950	97.0	97.3	98.2
1949	100.8	98.2	100.0
1948	95.8	97.3	96.1
1947	103.7	104.7	104.2
1946	127.1	119.9	126.6
1945	145.3	130.0	145.1
1944	147.9	123.0	148.4
1943	149.3	135.1	146.4



POPULATION

Estimated Population of the U. S. by States as of July 1, 1955*

As reported by the Bureau of the Census, Department of Commerce

State	Population	% of Total	State	Population	% of Total	State	Population	% of Total
Alabama	3,033,000	1.85	Maine	905,000	.55	Oklahoma	2,168,000	1.32
Arizona	980,000	.60	Maryland	2,669,000	1.62	Oregon	1,669,000	1.02
Arkansas	1,789,000	1.09	Massachusetts	5,016,000	3.05	Pennsylvania	11,159,000	6.79
California	13,032,000	7.93	Michigan	7,236,000	4.40	Rhode Island	845,000	.51
Colorado	1,549,000	.94	Minnesota	3,174,000	1.93	South Carolina	2,283,000	1.39
Connecticut	2,241,000	1.36	Mississippi	2,111,000	1.29	South Dakota	677,000	.41
Delaware	387,000	.24	Missouri	4,128,000	2.51	Tennessee	3,417,000	2.08
Dist. of Columbia	853,000	.52	Montana	633,000	.39	Texas	8,563,000	5.22
Florida	3,452,000	2.10	Nebraska	1,381,000	.84	Utah	781,000	.48
Georgia	3,621,000	2.20	Nevada	225,000	.14	Vermont	378,000	.23
Idaho	609,000	.37	New Hampshire	557,000	.34	Virginia	3,579,000	2.18
Illinois	9,361,000	5.70	New Jersey	5,420,000	3.30	Washington	2,570,000	1.56
Indiana	4,330,000	2.64	New Mexico	795,000	.48	West Virginia	2,002,000	1.22
Iowa	2,692,000	1.64	New York	16,124,000	9.81	Wisconsin	3,694,000	2.25
Kansas	2,060,000	1.25	North Carolina	4,285,000	2.61	Wyoming	306,000	.19
Kentucky	3,005,000	1.83	North Dakota	642,000	.39			
Louisiana	2,927,000	1.78	Ohio	8,966,000	5.46	Total	164,279,000	100.00

*—Does not include armed forces overseas but does include armed forces stationed in each state.

Estimates of the Civilian Population by States by Age Groups

As reported by the Bureau of the Census, U. S. Department of Commerce

State	POPULATION—JULY 1, 1954 Individuals: Under 21 Years	21 Years and Over	Per Cent of Value: Under 21 Years	21 Years and Over	POPULATION—APRIL 1, 1950 Individuals: Under 21 Years	21 Years and Over	Per Cent of Total: Under 21 Years	21 Years and Over	PER CENT CHANGE 1950 to 1954: Under 21 Years	21 Years and Over
Alabama	1,305,000	1,675,000	43.8	56.2	1,311,000	1,742,000	42.9	57.1	—0.5	—3.8
Arizona	401,000	508,000	44.1	55.9	305,000	437,000	41.2	58.8	+31.3	+16.4
Arkansas	751,000	1,028,000	42.2	57.8	796,000	1,112,000	41.7	58.3	—5.7	—7.6
California	4,315,000	7,846,000	35.5	64.6	3,321,000	7,092,000	31.9	68.1	+29.9	+10.6
Colorado	564,000	886,000	38.9	61.1	475,000	833,000	36.3	63.7	+18.8	+6.4
Connecticut	724,000	1,452,000	33.3	66.7	623,000	1,378,000	31.1	68.9	+16.2	+5.3
Delaware	133,000	233,000	36.4	63.6	107,000	211,000	33.7	66.3	+24.0	+10.4
Dist. of Col.	261,000	565,000	31.6	68.4	214,000	573,000	27.2	72.8	+21.8	—1.3
Florida	1,189,000	2,024,000	37.0	63.0	935,000	1,794,000	34.2	65.8	+27.2	+12.8
Georgia	1,521,000	1,987,000	43.4	56.6	1,423,000	1,980,000	41.8	58.2	+6.9	+0.4
Idaho	253,000	341,000	42.6	57.4	240,000	349,000	40.7	59.3	+5.5	—2.3
Illinois	3,100,000	6,034,000	33.9	66.1	2,741,000	5,931,000	31.6	68.4	+13.1	+1.7
Indiana	1,570,000	2,660,000	37.1	62.9	1,377,000	2,555,000	35.0	65.0	+14.0	+4.1
Iowa	985,000	1,677,000	37.0	63.0	926,000	1,694,000	35.3	64.7	+6.4	—1.0
Kansas	732,000	1,247,000	37.0	63.0	657,000	1,230,000	34.8	65.2	+11.4	+1.3
Kentucky	1,223,000	1,688,000	42.0	58.0	1,192,000	1,721,000	40.9	59.1	+2.6	—1.9
Louisiana	1,226,000	1,632,000	42.9	57.1	1,092,000	1,578,000	40.9	59.1	+12.3	+3.4
Maine	332,000	545,000	37.9	62.1	336,000	576,000	36.9	63.1	—1.4	—5.4
Maryland	949,000	1,568,000	37.7	62.3	803,000	1,498,000	34.9	65.1	+18.2	+4.7
Massachusetts	1,623,000	3,253,000	33.3	66.7	1,476,000	3,188,000	31.7	68.3	+9.9	+2.0
Michigan	2,673,000	4,342,000	38.1	61.9	2,262,000	4,098,000	35.6	64.4	+18.2	+5.9
Minnesota	1,188,000	1,939,000	38.0	62.0	1,072,000	1,909,000	36.0	64.0	+10.8	+1.6
Mississippi	963,000	1,139,000	45.8	54.2	966,000	1,198,000	44.6	55.4	—0.3	—4.9
Missouri	1,407,000	2,631,000	34.8	65.2	1,311,000	2,641,000	33.2	66.8	+7.3	—0.4
Montana	244,000	371,000	39.7	60.3	218,000	371,000	37.0	63.0	+11.9	....
Nebraska	498,000	860,000	36.7	63.3	464,000	858,000	35.1	64.9	+7.4	+0.3
Nevada	74,000	126,000	37.1	62.9	52,000	105,000	33.1	66.9	+43.2	+20.1
New Hampshire	192,000	353,000	35.3	64.7	180,000	351,000	33.9	66.1	+7.0	+0.6
New Jersey	1,717,000	3,511,000	32.8	67.2	1,471,000	3,331,000	30.6	69.4	+16.7	+5.4
New Mexico	359,000	390,000	48.0	52.0	302,000	366,000	45.2	54.8	+19.1	+6.5
New York	5,037,000	10,725,000	32.0	68.0	4,447,000	10,354,000	30.0	70.0	+13.3	+3.6
North Carolina	1,813,000	2,325,000	43.8	56.2	1,736,000	2,278,000	43.2	56.8	+4.4	+2.0
North Dakota	265,000	369,000	41.8	58.2	253,000	367,000	40.8	59.2	+4.8	+0.7
Ohio	3,140,000	5,561,000	36.1	63.9	2,664,000	5,274,000	33.6	66.4	+17.8	+5.4
Oklahoma	829,000	1,309,000	38.8	61.2	847,000	1,372,000	38.2	61.8	—2.0	—4.6
Oregon	600,000	1,035,000	36.7	63.3	519,000	1,000,000	34.2	65.8	+15.6	+3.6
Pennsylvania	3,801,000	7,159,000	34.7	65.3	3,495,000	6,985,000	33.4	66.6	+8.8	+2.5
Rhode Island	271,000	532,000	33.8	66.2	248,000	526,000	32.1	67.9	+9.1	+1.1
South Carolina	1,034,000	1,170,000	46.9	53.1	960,000	1,136,000	45.8	54.2	+7.7	+3.0
South Dakota	267,000	397,000	40.2	59.8	251,000	399,000	38.6	61.4	+6.5	—0.5
Tennessee	1,356,000	1,988,000	40.5	59.5	1,310,000	1,971,000	39.9	60.1	+3.5	+0.9
Texas	3,373,000	4,877,000	40.9	59.1	2,935,000	4,650,000	38.7	61.3	+15.0	+4.9
Utah	343,000	414,000	45.3	54.7	298,000	389,000	43.4	56.6	+15.1	+6.5
Vermont	143,000	232,000	38.2	61.8	140,000	237,000	37.1	62.9	+2.3	—2.4
Virginia	1,394,000	1,983,000	41.3	58.7	1,259,000	1,949,000	39.2	60.8	+10.8	+1.7
Washington	921,000	1,529,000	37.6	62.4	800,000	1,516,000	34.5	65.5	+15.1	+0.8
West Virginia	836,000	1,153,000	42.1	57.9	834,000	1,172,000	41.6	58.4	+0.2	—1.6
Wisconsin	1,352,000	2,272,000	37.3	62.7	1,212,000	2,222,000	35.3	64.7	+11.5	+2.3
Wyoming	119,000	169,000	41.3	58.7	109,000	173,000	38.8	61.2	+8.9	—2.1
Total	59,309,000	99,709,000	37.3	62.7	52,964,000	96,670,000	42.5	57.5	+12.1	+3.1

(1)—Less than 0.1 per cent. + = Gain. — = Decrease.

Due to the rounding of figures, the sum of parts shown may differ slightly from totals shown.

THE LABOR FORCE





TOTAL U. S. EMPLOYMENT—BUREAU OF LABOR STATISTICS

Federal Civilian Employment by Branch and Agency Groups

All data are in Thousands

Month	Total All Branches	EXECUTIVE Total	Dept. of Defense	P. O. Dept.	Other Depts.	Legislative	Judicial
Continental United States							
			1955				
Jan.	2,139	2,113.3	1,014.6	504.8	593.7	21.7	4.0
Feb.	2,142	2,116.4	1,016.8	503.7	595.8	21.8	4.0
Mar.	2,148	2,122.1	1,019.9	502.1	600.1	21.8	4.0
Apr.	2,153	2,127.4	1,020.9	504.6	602.0	21.7	4.0
May	2,159	2,132.9	1,023.7	503.8	605.3	21.6	4.0
June	2,183	2,157.4	1,033.2	509.3	614.9	21.7	4.0
July	2,187	2,161.3	1,036.4	510.6	614.3	21.6	4.0
Aug.	2,190	2,164.5	1,040.0	510.2	614.2	21.6	4.1
Sept.	2,173	2,146.9	1,035.1	506.1	605.7	21.5	4.3
Oct.	2,172	2,146.1	1,036.2	506.3	603.6	21.5	4.3
Nov.	....	2,142.2	....	....	....	....	..
Dec.	....	....	....	....	....	....	..
Avg. 1955	2,165	2,139.1	1,027.7	506.1	605.0	21.6	4.1
Avg. 1954	2,188	2,161.6	1,027.3	529.2	605.1	21.9	4.0
Avg. 1953	2,305	2,278.8	1,130.6	526.5	621.7	22.2	3.9
Avg. 1952	2,420	2,394.0	1,199.2	538.3	656.6	22.6	3.9
Dist. of Columbia and Metropolitan Area							
			1955				
Jan.	226.7	206.1	87.4	8.8	109.9	19.9	0.7
Feb.	227.6	207.0	87.7	8.8	110.5	19.9	0.7
Mar.	228.2	207.5	88.0	8.7	110.9	20.0	0.7
Apr.	227.9	207.3	88.0	8.7	110.6	19.9	0.7
May	228.2	207.7	88.3	8.7	110.7	19.8	0.7
June	231.9	211.3	90.6	8.6	112.3	19.9	0.7
July	232.4	211.9	91.1	8.5	112.3	19.8	0.7
Aug.	232.0	211.5	90.9	8.6	112.2	19.7	0.7
Sept.	229.6	209.2	90.0	8.5	110.7	19.7	0.7
Oct.	230.0	209.6	90.3	8.5	110.7	19.7	0.7
Nov.	....	....	....	....	....	....	..
Dec.	....	....	....	....	....	....	..
Avg. 1955	229.4	208.9	89.2	8.6	111.1	19.8	0.7
Avg. 1954	227.5	206.7	87.1	9.3	110.4	20.1	0.7
Avg. 1953	240.9	219.8	90.4	9.5	119.8	20.3	0.7
Avg. 1952	255.7	237.2	92.9	10.0	134.4	20.8	0.7

Production Workers in Manufacturing

All data are in Thousands

Month	Total Mfg. Employment	PRODUCTION WORKERS All Manufacturing	Durable Goods	Autos (Incl. Parts)	Aircraft and Parts	Non-durable Goods
			1955			
Jan.	15,925	12,523	7,182	730	523	5,341
Feb.	16,060	12,649	7,282	750	523	5,367
Mar.	16,201	12,778	7,375	773	520	5,403
Apr.	16,255	12,816	7,457	789	518	5,359
May	16,334	12,882	7,530	789	509	5,352
June	16,577	13,086	7,630	782	503	5,456
July	16,475	12,951	7,499	761	502	5,452
Aug.	16,807	13,262	7,553	722	501	5,709
Sept.	16,915	13,373	7,623	689	510	5,750
Oct.	16,999	13,446	7,729	711	512	5,717
Nov.	17,075	13,527	7,867	831	519	5,660
Dec.	16,984	13,421	7,841	....	....	5,580
Average	16,551	13,059	7,547	757	513	5,512
			1954			
Jan.	16,380	12,960	7,573	695	580	5,387
Feb.	16,265	12,860	7,473	675	572	5,387
Mar.	16,170	12,766	7,378	659	565	5,388
Apr.	15,948	12,548	7,266	655	558	5,282
May	15,781	12,394	7,163	630	548	5,231
June	15,835	12,437	7,130	624	543	5,307
July	15,584	12,179	6,876	590	537	5,303
Aug.	15,522	12,418	6,890	562	528	5,528
Sept.	15,972	12,577	6,965	504	531	5,612
Oct.	16,007	12,612	7,081	580	522	5,531
Nov.	16,057	12,657	7,198	665	524	5,459
Dec.	16,050	12,645	7,218	702	525	5,427
Average	15,909	12,588	7,194	638	544	5,404

Unemployment in 1955 4% of Labor Force

All data are in thousands.

	Civilian Labor Force	Total Employment	Unemployment	Mfg. Employment
		1955		
Jan.	63,497	60,150	3,347	15,925
Feb.	63,321	59,938	3,383	16,060
Mar.	63,654	60,477	3,176	16,201
Apr.	64,647	61,685	2,962	16,255
May	65,192	62,703	2,489	16,334
June	66,696	64,016	2,679	16,577
July	67,465	64,994	2,471	16,475
Aug.	67,726	65,488	2,237	16,807
Sept.	66,882	64,733	2,149	16,915
Oct.	67,292	65,161	2,131	16,999
Nov.	67,206	64,807	2,398	17,075
Dec.	66,592	64,165	2,427	16,984
Average	65,847	63,193	2,654	16,551
		1954		
Jan.	62,840	59,753	3,087	16,434
Feb.	63,725	60,055	3,670	16,322
Mar.	63,825	60,100	3,724	16,234
Apr.	64,063	60,598	3,465	16,000
May	64,425	61,119	3,305	15,836
June	65,445	62,098	3,347	15,884
July	65,494	62,148	3,347	15,627
Aug.	65,522	62,277	3,245	15,863
Sept.	65,244	62,145	3,100	16,019
Oct.	64,882	62,141	2,741	16,058
Nov.	64,624	61,731	2,893	16,107
Dec.	63,526	60,688	2,838	16,097
Average	64,468	61,238	3,230	16,040
		Monthly Averages		
1953	63,815	62,213	1,602	17,238
1952	62,966	61,293	1,673	16,334
1951	62,884	61,005	1,879	16,104
1950	63,099	59,957	3,142	14,967
1949	62,105	58,710	3,395	14,178
1948	61,442	59,378	2,064	15,321

Employment by Sex

All data are in Thousands

Month	Total Civilian Labor Force Male	Total Civilian Labor Force Female	Total Employment Male	Total Employment Female
		1955		
Jan.	43,879	19,617	41,485	18,666
Feb.	43,731	19,590	41,301	18,638
Mar.	44,078	19,576	41,795	18,683
Apr.	44,493	20,154	42,400	19,284
May	44,773	20,420	43,149	19,555
June	45,888	20,808	44,135	19,882
July	46,393	21,072	44,790	20,204
Aug.	46,245	21,481	44,858	20,631
Sept.	45,279	21,603	44,078	20,654
Oct.	45,341	21,951	44,087	21,073
Nov.	45,384	21,822	43,963	20,846
Dec.	45,010	21,582	43,437	20,728
Average	45,041	20,806	43,290	19,904
		1954		
Jan.	43,793	19,047	41,732	18,021
Feb.	44,167	19,558	41,625	18,430
Mar.	44,057	19,768	41,504	18,596
Apr.	44,337	19,726	41,993	18,605
May	44,471	19,954	42,274	18,846
June	45,317	20,129	43,123	18,975
July	45,658	19,837	43,432	18,716
Aug.	45,669	19,853	43,517	18,760
Sept.	44,724	20,520	42,731	19,413
Oct.	44,318	20,565	42,522	19,619
Nov.	44,180	20,445	42,305	19,427
Dec.	43,758	19,767	41,762	18,925
Average	44,537	19,931	42,377	18,861
		Monthly Averages		
1953	44,055	19,363	43,026	18,893
1952	43,455	19,513	42,391	18,902
1951	43,612	19,272	42,490	18,515
1950	44,442	18,657	42,287	17,670
1949	44,075	18,030	41,660	17,049
1948	43,858	17,583	42,428	16,950
1947	43,272	16,896	41,677	16,349

INDEXES OF INDUSTRIAL PRODUCTION

Adjusted for Seasonal Variation

FEDERAL RESERVE BOARD, 1947-49 = 100

Total Industrial Production

	1955	1954	1953	1952
Jan.	132	125	134	121
Feb.	133	125	134	121
Mar.	135	123	135	121
Apr.	136	123	136	120
May	138	125	137	119
June	139	124	136	118
July	139	123	137	115
Aug.	140	123	136	123
Sept.	142	124	133	129
Oct.	143	126	132	130
Nov.	144	128	129	133
Dec.	144	130	126	133
Average	139	125	134	124

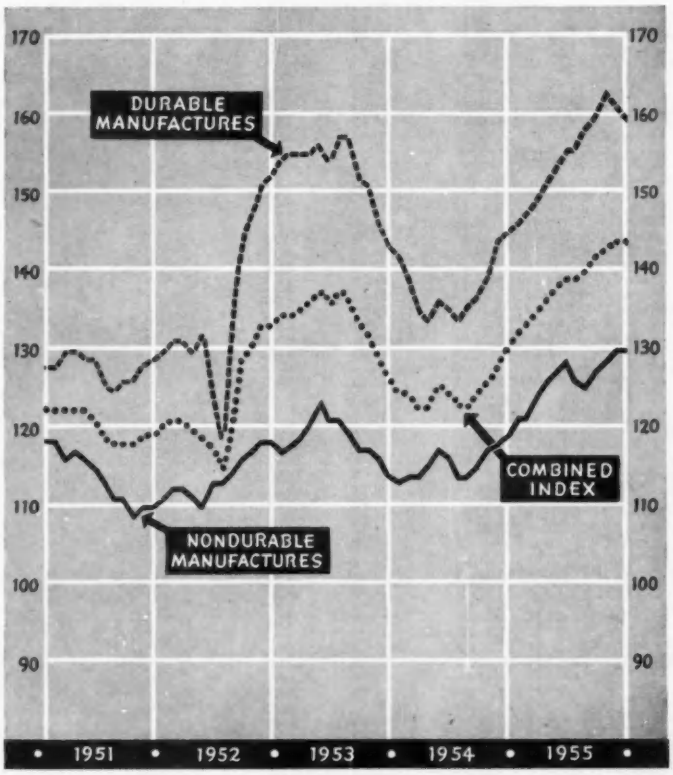
Manufactures

	1955	1954	1953	1952
Jan.	133	127	136	121
Feb.	134	126	136	121
Mar.	136	126	137	122
Apr.	138	125	138	120
May	140	126	139	121
June	141	125	138	119
July	141	124	139	116
Aug.	142	125	138	125
Sept.	144	126	135	130
Oct.	145	128	134	132
Nov.	146	130	131	135
Dec.	145	131	127	135
Average	140	127	136	125

Durable Manufactures

	1955	1954	1953	1952
Jan.	145	141	154	130
Feb.	147	139	155	131
Mar.	148	135	155	131
Apr.	151	134	155	130
May	153	136	156	132
June	155	135	154	125
July	155	134	157	119
Aug.	158	135	157	135
Sept.	160	137	152	144
Oct.	162	139	151	147
Nov.	161	142	146	151
Dec.	160	143	142	152
Average	155	138	153	136

1955 INDUSTRIAL PRODUCTION UP 11%



Transportation Equipment

	1955	1954	1953	1952
Jan.	191	185	191	140
Feb.	193	179	191	143
Mar.	195	173	190	145
Apr.	197	174	190	146
May	199	178	192	152
June	194	170	188	152
July	203	170	196	126
Aug.	205	166	191	140
Sept.	205	167	186	166
Oct.	208	169	189	177
Nov.	212	175	180	185
Dec.	207	187	182	190
Average	201	174	189	154

Nondurable Manufactures

	1955	1954	1953	1952
Jan.	121	113	117	111
Feb.	121	114	118	112
Mar.	124	114	119	112
Apr.	126	115	121	111
May	127	117	123	110
June	128	116	121	113
July	126	114	121	113
Aug.	125	114	119	114
Sept.	127	115	117	116
Oct.	128	117	117	117
Nov.	130	118	115	118
Dec.	130	119	112	118
Average	126	115	119	114

Minerals

	1955	1954	1953	1952
Jan.	120	113	116	119
Feb.	123	113	116	119
Mar.	121	112	115	118
Apr.	119	109	115	116
May	121	111	117	104
June	122	114	119	106
July	120	112	120	105
Aug.	120	109	119	111
Sept.	122	108	118	119
Oct.	122	109	114	111
Nov.	125	113	111	118
Dec.	127	116	113	117
Average	122	112	116	114

Manufacturers' Sales and Inventories

Based on data from Office of Business Economics, Department of Commerce

Year	Sales: All Manufacturing Industries	Sales: Durable Goods Industries	Sales: Nondurable Goods Industries	Inventories: All Manufacturing Industries	Inventories: Durable Goods Industries	Inventories: Nondurable Goods Industries
1955	$317,151,000,000	$157,974,000,000	$159,177,000,000	$45,859,000,000	$26,280,000,000	$19,579,000,000
1954	280,755,000,000	133,585,000,000	147,170,000,000	43,265,000,000	24,023,000,000	19,242,000,000
1953	298,423,000,000	149,578,000,000	148,845,000,000	45,942,000,000	26,338,000,000	19,604,000,000
1952	274,197,000,000	131,215,000,000	142,982,000,000	43,799,000,000	24,412,000,000	19,387,000,000
1951	267,705,000,000	124,504,000,000	143,201,000,000	42,815,000,000	22,806,000,000	20,009,000,000
1950	231,415,000,000	105,649,000,000	125,766,000,000	34,314,000,000	16,780,000,000	17,534,000,000

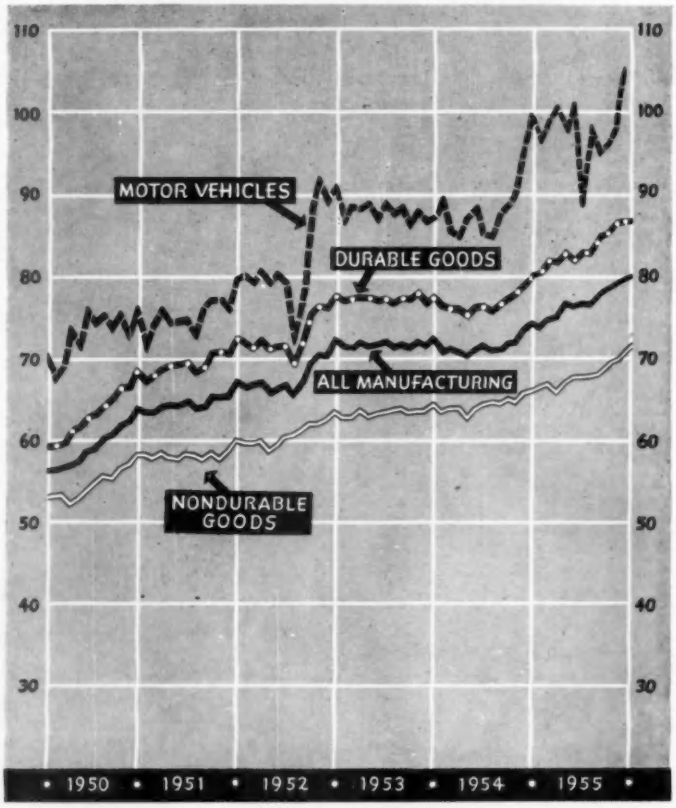
WAGES

EARNINGS OF PRODUCTION WORKERS—BUREAU OF LABOR STATISTICS

	Average Earnings		"Real Weekly Earnings"‡	Average Hrs. per Week
	Hourly	Weekly		
All Manufacturing				
1955				
Jan.	$1.84	$73.97	$64.72	40.2
Feb.	1.85	74.74	65.39	40.4
Mar.	1.85	75.11	65.71	40.6
Apr.	1.86	74.96	65.64	40.3
May	1.87	76.30	66.81	40.8
June	1.87	76.11	66.53	40.7
July	1.89	76.36	66.57	40.4
Aug.	1.88	76.33	66.66	40.6
Sept.	1.90	77.71	67.63	40.9
Oct.	1.91	78.50	68.32	41.1
Nov.	1.93	79.52	69.15	41.2
Dec.	1.93	79.99	69.66	41.4
Avg.	$1.88	$76.62	$66.92	40.7
1954				
Jan.	$1.80	$70.92	$61.56	39.4
Feb.	1.80	71.28	61.98	39.6
Mar.	1.79	70.71	61.59	39.5
Apr.	1.80	70.20	61.26	39.0
May	1.81	71.13	61.85	39.3
June	1.81	71.50	62.12	39.5
July	1.80	70.92	61.56	39.4
Aug.	1.79	71.06	61.79	39.7
Sept.	1.81	71.86	62.65	39.7
Oct.	1.81	72.32	63.07	39.9
Nov.	1.83	73.57	64.20	40.2
Dec.	1.83	74.12	64.85	40.5
Avg.	$1.81	$71.86	$62.60	39.7
Durable Goods				
1955				
Jan.	$1.96	$80.16	$70.13	40.9
Feb.	1.96	80.56	70.48	41.1
Mar.	1.97	81.56	71.36	41.4
Apr.	1.98	81.58	71.44	41.2
May	1.99	82.78	72.49	41.6
June	1.99	81.99	71.67	41.2
July	2.02	82.62	72.03	40.9
Aug.	2.01	82.61	72.15	40.1
Sept.	2.04	84.46	73.51	41.4
Oct.	2.04	85.07	74.04	41.7
Nov.	2.06	86.31	75.05	41.9
Dec.	2.06	86.52	75.43	42.0
Avg.	$2.01	$83.02	$72.51	41.3
1954				
Jan.	$1.91	$76.59	$66.43	40.1
Feb.	1.90	76.38	66.42	40.2
Mar.	1.90	76.00	66.20	40.0
Apr.	1.90	75.43	65.82	39.7
May	1.91	76.21	66.27	39.9
June	1.91	76.40	66.38	40.0
July	1.91	75.83	65.82	39.7
Aug.	1.91	76.59	66.60	40.1
Sept.	1.93	77.39	67.47	40.1
Oct.	1.93	77.97	68.10	40.4
Nov.	1.94	79.15	69.07	40.8
Dec.	1.95	80.15	70.12	41.1
Avg.	$1.92	$77.18	$67.23	40.2
Motor Vehicles (Incl. Parts)				
1955				
Jan.	$2.25	$96.75	$84.64	43.0
Feb.	2.26	98.99	86.60	43.8
Mar.	2.27	100.56	87.98	44.3
Apr.	2.25	97.88	85.71	43.5
May	2.28	101.00	88.44	44.3
June	2.23	89.20	77.97	40.0
July	2.30	97.75	85.22	42.5
Aug.	2.30	95.45	83.36	41.5
Sept.	2.33	96.23	83.75	41.3
Oct.	2.35	98.47	85.70	41.9
Nov.	2.38	106.39	92.51	44.7
Dec.	...	....	....	...
Avg.	$2.29	$98.06	$85.63	42.8
1954				
Jan.	$2.19	$89.79	$77.94	41.0
Feb.	2.17	85.72	74.54	39.5
Mar.	2.15	84.93	73.98	39.5
Apr.	2.16	87.26	76.14	40.4
May	2.16	88.34	76.82	40.9
June	2.17	85.28	74.09	39.3
July	2.17	85.06	73.84	39.2
Aug.	2.20	88.00	76.52	40.0
Sept.	2.24	89.15	77.72	39.8
Oct.	2.23	90.54	79.07	40.6
Nov.	2.25	96.53	84.23	42.9
Dec.	2.26	99.44	87.00	44.0
Avg.	$2.20	$89.32	$77.80	40.6

‡—Weekly earnings adjusted to Consumers' Price Index.

AVERAGE GROSS WEEKLY WAGES



Aircraft and Parts

	Average Earnings		"Real Weekly Earnings"‡	Average Hrs. per Week	Average Earnings		"Real Weekly Earnings"‡	Average Hrs. per Week
	Hourly	Weekly			Hourly	Weekly		
	1955				1954			
Jan.	$2.14	$88.81	$77.70	41.5	$2.05	$83.23	$72.25	40.6
Feb.	2.14	87.95	76.95	41.1	2.07	85.28	74.16	41.2
Mar.	2.14	88.38	77.32	41.3	2.06	84.46	73.57	41.0
Apr.	2.14	87.10	76.27	40.7	2.06	83.42	72.80	40.5
May	2.15	88.15	77.19	41.0	2.06	83.84	72.90	40.7
June	2.15	88.15	77.05	41.0	2.08	84.86	73.73	40.8
July	2.17	89.40	77.94	41.2	2.08	84.66	73.49	40.7
Aug.	2.17	88.98	77.71	41.0	2.09	85.27	74.15	40.8
Sept.	2.19	90.67	78.91	41.4	2.10	85.63	74.70	40.8
Oct.	2.20	91.30	79.46	41.5	2.10	85.47	74.65	40.7
Nov.	2.29	91.74	79.77	41.7	2.12	87.34	76.21	41.2
Dec.	...	....	....	...	2.12	87.77	76.79	41.4
Avg.	$2.16	$89.15	$77.84	41.2	$2.08	$85.07	$74.10	40.9

Nondurable Goods

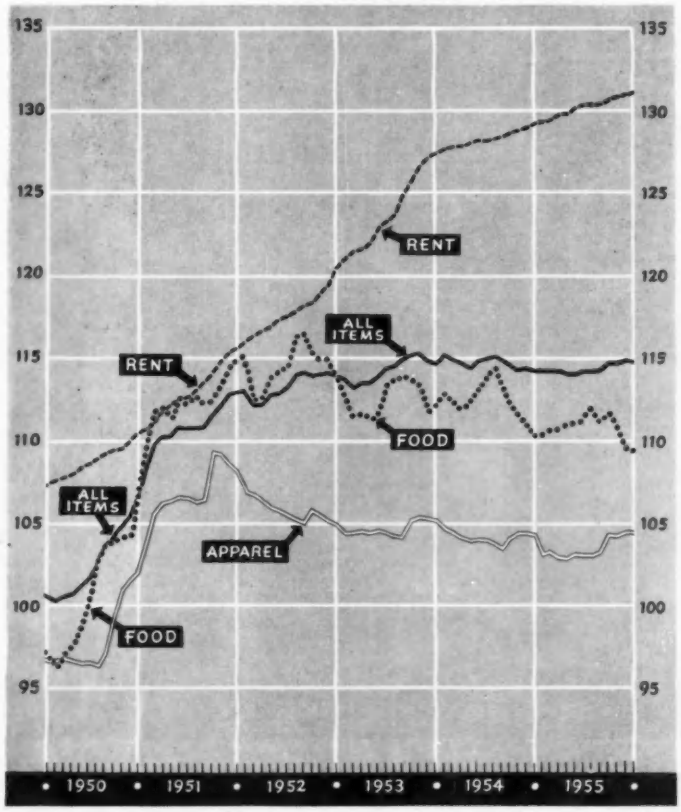
	Average Earnings		"Real Weekly Earning"‡	Average Hrs. per Week	Average Earnings		"Real Weekly Earnings"‡	Average Hrs. per Week
	Hourly	Weekly			Hourly	Weekly		
	1955				1954			
Jan.	$1.68	$66.02	$57.76	39.3	$1.65	$63.53	$55.15	38.5
Feb.	1.68	66.36	58.06	39.5	1.65	64.02	55.67	38.8
Mar.	1.68	66.70	58.36	39.7	1.65	64.02	55.77	38.8
Apr.	1.69	65.91	57.71	39.0	1.65	62.87	54.86	38.1
May	1.70	67.32	58.95	39.6	1.66	63.91	55.57	38.5
June	1.70	67.83	59.29	39.9	1.66	64.57	56.10	38.9
July	1.71	67.89	59.19	39.7	1.66	64.74	56.20	39.0
Aug.	1.70	67.83	59.24	39.9	1.65	64.68	56.24	39.2
Sept.	1.72	68.97	60.03	40.1	1.66	65.24	56.88	39.8
Oct.	1.72	69.32	60.33	40.3	1.66	65.07	56.83	39.2
Nov.	1.74	70.12	60.97	40.3	1.67	65.97	57.56	39.5
Dec.	1.75	71.23	62.10	40.7	1.67	66.47	58.15	39.8
Avg.	$1.70	$67.96	$59.35	39.83	$1.66	$64.74	$56.39	39.0

‡—Weekly earnings adjusted to Consumers' Price Index.

CONSUMERS' PRICE INDEX—BUREAU OF LABOR STATISTICS

Based on Monthly Average of 1947-1949 = 100

TREND OF CONSUMER PRICES



Wholesale Prices of Selected Commodities

Bureau of Labor Statistics' Indices, 1947-1949 = 100

1955	All Commodities	Farm Products	Processed Foods	Textile Products	Metals and Metal Products	Lumber and Wood Products	Machinery and Motive Products
Jan.	110.1	92.5	103.8	95.2	130.1	130.3	125.8
Feb.	110.4	93.1	103.2	95.2	131.5	121.2	126.1
Mar.	110.0	92.1	101.6	95.3	131.9	121.4	126.1
Apr.	110.5	94.2	102.5	95.0	132.9	122.4	126.3
May	109.9	91.2	102.1	95.0	132.5	123.5	126.7
June	110.3	91.8	103.9	95.2	132.6	123.7	127.1
July	110.5	89.5	103.1	95.3	136.7	124.1	127.5
Aug.	110.9	88.1	101.9	95.3	139.5	125.1	128.5
Sept.	111.7	89.3	101.5	95.4	141.9	125.7	130.0
Oct.	111.6	86.8	100.2	95.4	142.4	125.4	131.4
Nov.	111.2	84.1	98.8	95.6	142.9	125.0	132.5
Dec.	111.3	83.4	98.2	95.6	143.9	125.1	132.8
Average	110.7	89.7	101.7	95.3	136.6	123.6	128.4
Monthly Averages							
1954	110.3	95.6	105.3	95.2	128.0	118.0	124.6
1953	110.1	97.0	104.6	97.3	126.9	120.2	123.0
1952	111.6	107.0	108.8	99.8	123.0	120.3	121.5
1951	114.8	113.4	111.4	110.6	122.8	123.9	119.0
1950	103.1	97.5	99.8	99.2	110.3	113.9	108.6
1949	99.2	92.8	95.7	95.5	104.8	99.2	106.6
1948	104.4	107.3	106.1	104.4	103.9	107.2	100.9
1947	96.4	100.0	98.2	100.1	91.3	93.7	92.5
1946	78.7	83.2	77.6	....	73.9	60.3	80.3
1945	68.8	71.6	60.8	....	65.9	52.5	71.6

All Items

Month	1955	1954	1953	1952
Jan.	114.3	115.2	113.9	113.1
Feb.	114.3	115.0	113.4	113.4
Mar.	114.3	114.8	113.6	113.4
Apr.	114.2	114.6	113.7	112.9
May	114.2	115.0	114.0	113.0
June	114.4	115.1	114.5	113.4
July	114.7	115.2	114.7	114.1
Aug.	114.5	115.0	115.0	114.3
Sept.	114.9	114.7	115.2	114.1
Oct.	114.9	114.5	115.4	114.3
Nov.	115.0	114.6	115.0	114.3
Dec.	114.7	114.3	114.9	114.1
Average	114.5	114.8	114.4	113.5

Apparel

Month	1955	1954	1953	1952
Jan.	103.3	104.9	104.6	107.0
Feb.	103.4	104.7	104.6	106.8
Mar.	103.2	104.3	104.7	106.4
Apr.	103.1	104.1	104.6	106.0
May	103.3	104.2	104.7	105.8
June	103.2	104.2	104.6	105.6
July	103.2	104.0	104.4	105.3
Aug.	103.4	103.7	104.3	105.1
Sept.	104.6	104.3	105.3	105.8
Oct.	104.6	104.6	105.5	105.6
Nov.	104.7	104.6	105.5	105.2
Dec.	104.7	104.3	105.3	105.1
Average	103.7	104.3	104.9	105.8

Food

Month	1955	1954	1953	1952
Jan.	110.6	113.1	113.1	115.0
Feb.	110.8	112.6	111.5	112.6
Mar.	110.8	112.1	111.7	112.7
Apr.	111.2	112.4	111.5	113.9
May	111.1	113.3	112.1	114.3
June	111.3	113.8	113.7	114.6
July	112.1	114.6	113.8	116.3
Aug.	111.2	113.9	114.1	116.6
Sept.	111.6	112.4	113.8	115.4
Oct.	110.8	111.8	113.6	115.0
Nov.	109.8	111.1	112.0	115.0
Dec.	109.5	110.4	112.3	113.8
Average	110.9	112.6	112.8	114.6

Rent

Month	1955	1954	1953	1952
Jan.	129.5	127.8	121.1	116.0
Feb.	129.7	127.9	121.5	116.4
Mar.	130.0	128.0	121.7	116.7
Apr.	129.9	128.2	122.1	116.9
May	130.3	128.3	123.0	117.4
June	130.4	128.3	123.3	117.6
July	130.4	128.5	123.8	117.9
Aug.	130.6	128.6	125.1	118.2
Sept.	130.5	128.8	126.0	118.3
Oct.	130.8	129.0	126.8	118.8
Nov.	130.9	129.2	127.3	119.5
Dec.	131.1	129.4	127.6	120.7
Average	130.3	128.5	124.1	117.9

Medical Care

Month	1955	1954	1953	1952
Jan.	126.5	123.7	119.4	114.7
Feb.	126.8	124.1	119.3	114.8
Mar.	127.0	124.4	119.5	115.7
Apr.	127.3	124.9	120.2	115.9
May	127.5	125.1	120.7	116.1
June	127.6	125.1	121.1	117.8
July	127.9	125.2	121.5	118.0
Aug.	128.0	125.5	121.8	118.1
Sept.	128.2	125.7	122.6	118.8
Oct.	128.7	125.9	122.8	118.9
Nov.	129.5	126.1	123.3	118.9
Dec.	130.2	126.3	123.6	119.3
Average	128.0	125.2	121.2	117.2

Transportation

Month	1955	1954	1953	1952
Jan.	127.6	130.5	129.3	122.8
Feb.	127.4	129.4	129.1	123.7
Mar.	127.3	129.0	129.3	124.4
Apr.	125.3	129.1	129.4	124.8
May	125.5	129.1	129.4	125.1
June	125.8	128.9	129.4	126.3
July	125.4	126.7	129.7	126.8
Aug.	125.4	126.6	130.6	127.0
Sept.	125.3	126.4	130.7	127.7
Oct.	126.6	125.0	130.7	128.4
Nov.	128.5	127.6	130.1	128.9
Dec.	127.3	127.3	128.9	128.9
Average	126.4	128.0	129.7	126.2

MACHINE TOOLS

INDEX OF MACHINE TOOL NEW ORDERS AND SHIPMENTS

Based on Monthly Average of 1945-1947 = 100



Index of Machine Tool Shipments

As reported by the National Machine Tool Builders' Assn.

(Monthly Average 1945-1947 = 100)

Month	1955	1954	1953	1952	1951	1950
Jan.	167.3	219.4	361.6	266.6	114.3	52.8
Feb.	168.2	223.1	354.5	279.6	123.8	56.1
Mar.	202.5	327.2	375.9	299.5	158.9	75.3
Apr.	180.1	302.7	372.7	307.9	157.7	61.6
May	180.9	270.3	356.0	323.0	175.1	82.5
June	198.8	276.3	342.2	330.8	182.8	91.9
July	152.9	205.7	267.6	259.7	144.7	68.3
Aug.	164.6	203.7	299.6	317.0	178.9	95.7
Sept.	195.4	213.4	328.3	368.3	189.8	101.6
Oct.	204.2	191.0	348.4	357.8	221.3	100.9
Nov.	214.2	179.5	320.2	342.5	226.0	110.9
Dec.	237.1	203.4	301.4	355.0	264.7	135.7
Monthly Avg.	188.9	251.3	335.7	317.3	178.2	86.1

Index of Machine Tool New Orders

As reported by the National Machine Tool Builders' Assn.

(Monthly Average 1945-1947 = 100)

Month	1955	1954	1953	1952	1951	1950
Jan.	203.0	173.5	255.8	347.8	475.4	99.7
Feb.	209.4	159.8	282.1	318.8	615.5	89.2
Mar.	214.6	169.6	327.0	324.3	590.3	107.4
Apr.	178.1	142.8	276.8	293.5	516.1	98.9
May	243.7	139.5	246.4	284.6	483.0	116.4
June	263.2	185.2	273.4	342.9	558.8	124.1
July	217.8	124.7	247.3	376.3	490.6	253.1
Aug.	221.3	147.9	286.9	311.1	488.9	305.1
Sept.	207.3	180.9	223.7	302.4	380.2	280.6
Oct.	347.1	148.9	198.7	243.3	403.9	289.6
Nov.	433.3	119.5	146.6	205.4	330.5	291.9
Dec.	530.8	202.9	149.8	225.2	376.5	410.1
Monthly Avg.	272.5	157.9	243.6	257.9	475.8	205.5

Value of Machine Tool Shipments

As reported by the N.M.T.B.A.

Month	1955	1954
January	$ 49,500,000	$ 94,450,000
February	49,750,000	95,550,000
March	59,900,000	96,750,000
April	53,250,000	89,500,000
May	53,500,000	79,950,000
June	58,800,000	81,700,000
July	45,200,000	60,800,000
August	48,650,000	60,200,000
September	57,800,000	63,100,000
October	60,400,000	56,500,000
November	63,350,000	53,100,000
December	70,100,000	60,150,000
Total	$670,200,000	$891,750,000

Index of Machine Tool Foreign Orders

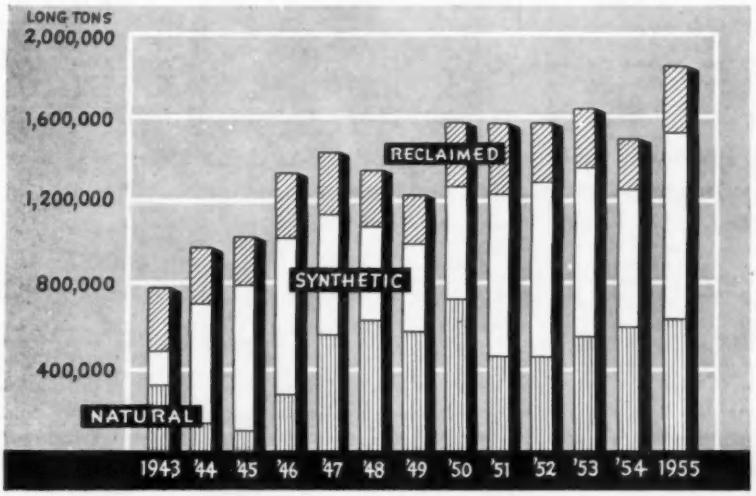
As reported by the N.M.T.B.A., 1945-1947=100

Month	1955	1954	1953	1952
January	23.6	19.1	26.3	33.6
February	26.3	14.4	22.9	14.4
March	25.7	24.9	17.4	23.3
April	19.3	15.9	13.9	15.6
May	18.7	11.9	14.7	21.4
June	21.8	15.5	16.6	20.3
July	19.1	14.8	18.6	14.9
August	26.7	16.2	17.6	22.7
September	18.7	12.1	16.5	23.1
October	21.1	16.6	21.7	22.5
November	22.8	17.9	16.9	14.3
December	49.6	24.6	21.9	19.6
Monthly Avg.	24.4	17.0	18.7	21.3

RUBBER

U. S. CONSUMPTION OF RUBBER

Natural, Synthetic and Reclaimed



Production, Consumption & Stocks of Synthetic Rubber

Long Tons

Month and Year	Production	Consumption	Stocks, End of Month*
1955			
Jan.	70,045	68,456	147,774
Feb.	67,609	67,709	141,663
Mar.	78,757	77,173	143,587
Apr.	75,604	72,123	141,444
May	81,617	75,421	138,108
June	77,819	79,497	130,694
July	81,472	62,897	139,902
Aug.	83,628	72,722	137,050
Sept.	83,257	76,375	136,035
Oct.	89,060	80,389	134,753
Nov.	91,281	81,661	133,664
Dec.	90,319	75,943	135,630
Total	970,468	890,366	...
Yearly Totals			
1954	622,852	620,200	150,175
1953	848,461	771,800	175,845
1952	798,566	787,500	118,987
1951	845,160	748,700	129,952
1950	476,184	512,600	52,758
1949	393,696	397,100	98,042
1948	488,340	430,600	115,111
1947	508,704	559,700	62,366

*—Or December 31, of each year.

U. S. Consumption of Natural, Synthetic and Reclaimed Rubber

Chemical and Rubber Division, Business and Defense Service Administration

All Data are in Long Tons

Period	Dry Natural Rubber	Natural Rubber Latex	U. S. Synthetic Rubber: GR-S	Butyl	Neoprene	N-Type	S-Type	Total Synthetic	Imported Synthetic: S-Type	Butyl	Total Natural & Synthetic	Reclaimed	Grand Total
1955													
January	49,556	7,355	54,728	4,346	5,676	1,931	146	66,827	1,497	132	125,367	25,321	150,689
February	43,931	7,066	54,707	4,214	5,476	1,921	118	66,436	1,175	98	118,706	24,323	143,029
March	50,057	8,415	62,548	4,763	6,423	2,174	96	76,004	1,093	76	135,645	28,674	164,319
April	45,231	7,732	54,091	4,260	5,884	2,172	4,530	70,937	1,125	'61	125,086	26,609	151,695
May	48,103	6,643	2,533	4,413	6,143	1,965	59,315	74,369	1,010	42	130,167	27,652	157,819
June	49,693	6,589	3,666	4,651	6,320	2,581	61,382	78,600	844	53	135,779	29,157	164,936
July	40,697	5,469	2,690	3,832	4,294	1,621	49,749	62,186	649	62	109,063	22,563	131,626
August	41,575	6,784	....	4,195	6,450	2,219	59,183	72,047	563	112	121,081	25,790	146,871
September	43,511	7,452	....	4,459	6,197	2,270	62,778	75,704	552	119	127,338	26,340	153,678
October	47,786	7,209	....	4,684	6,626	2,280	66,206	79,796	538	55	135,384	26,597	161,981
November	46,149	6,620	....	4,351	6,896	2,234	67,436	80,917	675	69	134,430	27,229	161,659
December	42,092	6,473	....	4,130	6,496	2,113	62,416	75,155	721	67	124,508	24,604	149,112
Total—1955	548,381	83,807	234,963	52,298	72,881	25,481	493,355	878,978	10,442	946	1,522,554	314,870	1,837,424
1954													
January	41,078	5,882	37,707	5,390	4,774	1,272	137	49,280	845	48	97,133	19,114	116,247
February	41,302	5,595	36,765	5,659	4,467	1,190	146	48,227	796	37	95,957	19,461	115,418
March	47,099	6,610	42,074	6,266	5,177	1,447	171	55,135	891	34	109,769	22,882	132,651
April	45,559	5,892	40,194	6,140	4,694	1,395	154	52,577	976	101	105,105	21,883	126,988
May	45,429	5,969	40,030	5,494	4,486	1,366	115	51,491	1,029	108	104,026	20,536	124,562
June	48,369	5,884	43,782	5,937	4,769	1,491	131	56,110	1,061	24	111,448	22,321	133,769
July	33,596	4,298	31,474	4,107	3,499	1,145	125	40,350	1,201	1	79,446	16,301	95,747
August	32,841	5,228	30,800	3,545	4,647	1,439	87	40,518	1,509	24	80,120	17,660	97,780
September	45,509	6,903	40,204	5,080	5,049	1,493	79	51,905	1,915	58	106,290	19,926	126,216
October	48,443	7,527	45,002	4,633	4,931	1,604	97	56,267	1,964	78	114,279	22,098	136,377
November	45,704	7,622	44,429	3,904	5,276	1,635	121	55,365	1,859	63	110,613	22,321	132,934
December	47,425	7,671	50,540	4,489	5,434	1,638	147	62,248	1,788	94	119,226	24,546	143,772
Total—1954	520,354†	75,931†	483,001	60,794	57,203	17,715†	1,510	620,223†	15,834	670	1,233,012†	249,049	1,482,061†
Yearly Totals													
1953	486,098	67,375	611,748	76,469	65,900	16,929	760	771,806	11,673	1,357	1,338,309	285,050	1,623,359
1952	400,279	53,567	643,816	68,991	55,522	13,866	259	787,454	17,345	2,238	1,261,413	280,002	1,541,415
1951	407,265	46,750	617,200	68,034	48,887	13,066	1,463	748,650	7,781	2,466	1,214,298	346,121	1,560,419
1950	664,130	56,138	388,427	61,372	43,781	11,930	7,069	512,579	20,734	4,976	1,258,557	303,733	1,562,290
1949	538,405	36,117	299,420	50,855	31,753	8,827	6,284	397,139	15,433	1,809	988,903	222,679	1,211,582
1948	593,843	28,489	334,233	54,856	32,118	5,771	3,640	430,618	7,440	4,014	1,069,404	261,113	1,330,517
1947	548,752	13,909	446,316	68,838	37,703	4,536	2,273	559,666	....	....	1,122,327	288,395	1,410,722
1946	271,883	5,714	79,228	79,228	44,357	5,988	721	761,699	....	....	1,039,296	275,410	1,314,706

†—Will not add to totals shown due to year end adjustment.

STEEL

Steel Production by Grade of Steel

As reported by the American Iron & Steel Institute

Year	CARBON Net Tons	CARBON % of Total	ALLOY Net Tons	ALLOY % of Total	STAINLESS Net Tons	STAINLESS % of Total	TOTAL Net Tons	TOTAL % of Total
1955	106,578,385	91.1	9,266,523	7.9	1,191,177	1.0	117,036,085	100
1954	81,118,789	91.8	6,340,842	7.2	852,021	1.0	88,311,652	100
1953	101,281,525	90.8	9,279,117	8.3	1,049,077	0.9	111,609,719	100
1952	84,033,288	90.2	8,204,587	8.8	930,164	1.0	93,168,039	100
1951	95,075,261	90.4	9,190,857	8.7	933,730	0.9	105,199,848	100
1950	88,265,970	91.1	7,737,796	8.0	832,309	0.9	96,836,075	100
1949	72,080,607	92.4	5,442,476	7.0	455,093	0.6	77,978,176	100
1948	80,159,356	90.4	7,863,736	9.0	617,378	0.6	88,640,470	100
1947	77,465,840	91.2	6,908,298	8.2	519,933	0.6	84,894,071	100
1946	60,525,529	91.0	5,527,098	8.3	550,097	0.7	66,602,724	100

Steel Ingot Production, Tons

As reported by the American Iron & Steel Institute

Month	1955 Production	1955 % of Cap.	1954 Production	1954 % of Cap.	1953 Production	1953 % of Cap.
Jan.	8,837,736	82.7	7,951,486	75.3	9,897,962	99.1
Feb.	8,496,934	88.0	7,083,237	74.3	8,932,779	99.1
Mar.	9,981,754	93.4	7,289,600	69.0	10,168,098	101.8
Apr.	9,815,095	94.8	6,970,937	68.1	9,545,538	98.7
May	10,328,316	96.6	7,472,738	70.7	9,997,080	100.1
June	9,746,467	94.1	7,363,634	72.0	9,404,475	97.2
July	9,100,946	85.3	6,627,597	62.9	9,275,673	93.1
Aug.	9,954,545	89.7	6,666,907	63.1	9,405,580	94.2
Sept.	9,882,325	95.7	6,807,483	66.7	8,883,428	92.1
Oct.	10,502,000	98.2	7,701,533	72.9	9,462,722	94.7
Nov.	10,247,398	99.0	8,089,427	79.1	8,690,052	89.9
Dec.	10,142,569	99.4	8,287,073	78.6	7,946,328	79.7
Total	117,036,085	92.3	88,311,652	71.0	111,609,719	94.9

Shipments of Steel Products by Market Classifications, 1952-55

All grades including Carbon, Alloy, and Stainless

As reported by the American Iron and Steel Institute

Consuming Industries	1955 Net Tons	1955 % of Total	1954 Net Tons	1954 % of Total	1953 Net Tons	1953 % of Total	1952 Net Tons	1952 % of Total
Automotive								
Vehicles and parts	18,203,409	21.49	7,560,625	11.97	8,681,313	10.83	6,101,908	8.93
Parts, accessories and supplies			3,901,398	6.18	5,518,336	6.88	4,325,480	6.36
Forgings	518,471	.61	330,966	.52	464,126	.58	423,409	.62
Tractors	746,346	.88	452,830	.72	598,549	.75	594,341	.87
Aircraft	96,892	.11	88,848	.14	161,043	.20	136,337	.20
Total—Automotive and Aircraft	19,565,118	23.09	12,334,667	19.53	15,423,367	19.24	11,581,475	17.03
Warehouse and Distributors	15,758,005	18.60	11,999,470	19.01	14,878,859	18.57	13,328,642	19.60
Construction, incl. Maintenance	9,681,778	11.43	8,634,987	13.67	9,918,203	12.37	7,800,619	11.47
Containers	6,723,074	7.94	5,870,618	9.30	6,051,214	7.55	5,550,625	8.16
Contractors' Products	3,982,161	4.70	2,969,812	4.70	3,324,218	4.15	2,612,071	3.84
Machinery, Ind. Equip. & Tools (less Tractors)	3,952,678	4.66	3,064,208	4.85	3,730,055	4.65	3,201,255	4.71
Steel for Converting and Processing	3,753,381	4.43	2,452,703	3.88	3,513,976	4.38	3,037,146	4.47
Export	3,583,077	4.23	2,533,883	4.01	2,679,731	3.34	3,271,200	4.81
Rail Transportation	3,520,849	4.16	2,457,297	3.89	4,787,830	5.98	3,986,029	5.86
Electrical Machinery and Equipment	2,291,866	2.71	1,739,007	2.75	2,111,879	2.63	1,609,461	2.37
Appliances, Utensils and Cutlery	2,199,114	2.60	1,441,461	2.28	2,045,749	2.55	1,359,227	2.00
Other Domestic & Commercial Equipment	2,189,416	2.58	1,742,090	2.76	2,086,076	2.60	1,562,458	2.30
Bolts, Nuts, Rivets and Screws	1,475,340	1.74	962,572	1.52	1,341,606	1.67	1,297,486	1.91
Agricultural	1,336,886	1.58	1,189,199	1.88	1,233,247	1.54	1,347,042	1.98
Forgings (Other than Automotive)	1,266,032	1.49	832,876	1.32	1,444,839	1.80	1,434,157	2.11
Ordnance and Other Military	856,527	1.01	964,440	1.53	2,690,880	3.36	2,095,593	3.08
Oil and Gas Drilling	792,767	.94	585,562	.93	755,714	.94	768,208	1.13
Shipbuilding and Marine Equipment	601,234	.71	501,231	.79	872,209	1.10	1,028,554	1.51
Mining, Quarrying and Lumbering	268,987	.32	201,624	.32	324,380	.40	309,628	.46
Non-Reporting Companies	919,154	1.08	675,019	1.08	937,861	1.18	822,736	1.20
Total Shipments	84,717,444	100.00	63,152,726	100.00	80,151,893	100.00	68,003,612	100.00

Distribution of Carbon, Alloy and Stainless Steel—by Market Classifications

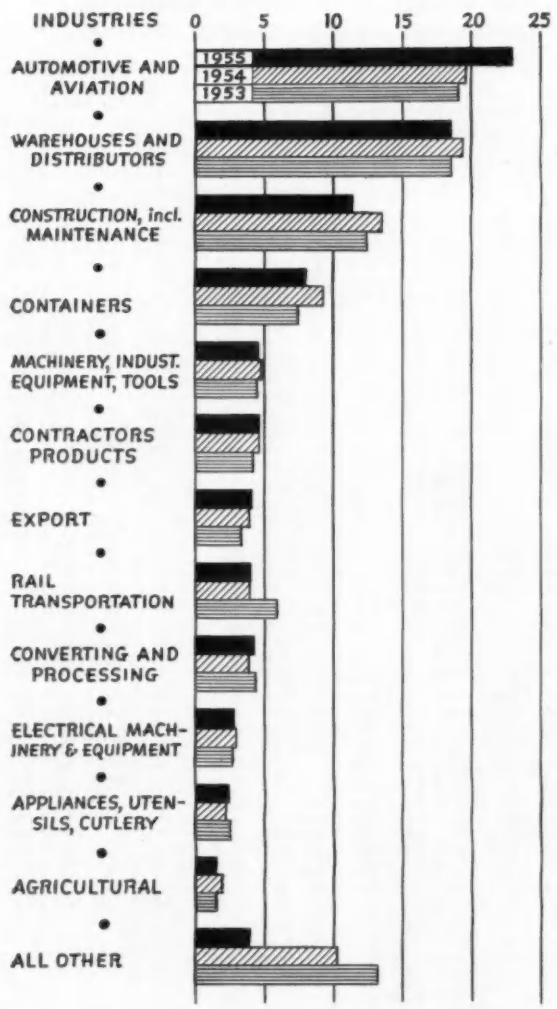
As reported by the American Iron & Steel Institute

Consuming Industries	CARBON STEEL 1955* % of Total	CARBON STEEL 1954 Net Tons	CARBON STEEL 1954 % of Total	ALLOY STEEL 1955* % of Total	ALLOY STEEL 1954 Net Tons	ALLOY STEEL 1954 % of Total	STAINLESS STEEL 1955* % of Total	STAINLESS STEEL 1954 Net Tons	STAINLESS STEEL 1954 % of Total
Automotive									
Vehicles and Parts (Assemblers)	13.62	6,856,180	11.62	19.87	670,312	17.80	7.05	34,133	7.55
Parts, Accessories and Supplies	7.03	3,381,719	5.74	13.81	467,562	12.42	13.76	52,117	11.52
Forgings	.34	171,543	.29	4.58	159,370	4.23	.02	53	.01
Tractors	.83	399,802	.68	1.50	52,990	1.41	.02	38	.01
Aircraft	.04	31,610	.05	.84	38,638	1.03	2.18	18,600	4.11
Total—Automotive and Aircraft	21.86	10,840,854	18.39	40.60	1,388,872	36.89	24.03	104,941	23.20
Steel for Converting and Processing	4.40	2,364,164	4.01	1.58	58,537	1.55	9.25	30,002	6.63
Forgings (Other than Automotive)	.93	482,282	.82	9.08	341,916	9.08	2.01	8,678	1.92
Bolts, Nuts,, Rivets and Screws	1.73	909,531	1.54	1.45	46,561	1.24	1.29	6,480	1.43
Warehouses and Distributors	18.94	11,456,401	19.44	10.25	419,793	11.15	26.99	123,276	27.25
Construction, including Maintenance	12.12	8,562,668	14.53	1.33	67,260	1.79	.63	5,059	1.12
Contractors' Products	4.95	2,947,415	5.00	.40	13,060	.35	2.53	9,337	2.06
Rail Transportation	4.21	2,382,043	4.04	2.42	70,566	1.87	.82	4,688	1.04
Shipbuilding and Marine Equipment	.70	441,590	.75	.75	58,104	1.54	.31	1,537	.34
Oil and Gas Drilling	.76	450,024	.76	3.63	134,946	3.58	.04	592	.13
Mining, Quarrying and Lumbering	.30	187,835	.32	.50	13,540	.36	.06	249	.05
Agricultural	1.63	1,161,757	1.97	.71	27,053	.72	.06	389	.08
Machinery, Incl. Equip. & Tools (less Tractors)	4.25	2,702,911	4.59	9.02	332,284	8.82	5.95	29,013	6.41
Electrical Machinery and Equipment	2.15	1,324,648	2.25	10.36	407,228	10.81	1.25	7,131	1.58
Appliances, Utensils and Cutlery	2.71	1,390,205	2.36	.40	19,342	.51	7.15	31,914	7.06
Other Domestic and Commercial Equipment	2.70	1,714,065	2.91	.37	16,537	.44	2.30	11,488	2.54
Containers	9.41	5,851,564	9.93	.47	17,444	.46	.62	1,610	.36
Ordnance and Other Military	1.08	847,250	1.44	1.70	113,631	3.02	.44	3,559	.79
Export	4.32	2,411,502	4.09	1.99	105,778	2.81	3.55	16,603	3.67
Shipments of Non-Reporting Companies	.85	505,914	.86	2.99	113,300	3.01	10.72	55,805	12.34
Total—All Groups	100.00	58,934,623	100.00	100.00	3,765,752	100.00	100.00	452,351	100.00

*—Based on totals for nine months.

STEEL CONSUMPTION BY INDUSTRIES

Shown in Per Cent of Total Consumption



Shipments of Aluminum Mill Products

As reported by the Industry Division, Bureau of the Census

All data are in Thousands of Pounds

Month	1955	1954	1953	1952
January	206,175	153,920	185,436	149,143
February	205,198	145,335	180,798	146,306
March	234,730	170,010	205,024	153,641
April	227,939	174,176	209,920	159,355
May	234,309	168,678	201,275	158,122
June	255,701	184,205	201,281	155,495
July	210,222	169,917	196,481	148,751
August	250,036	183,063	184,652	159,559
September	244,135	179,664	181,190	165,729
October	248,806	180,356	182,654	183,868
November	245,526	181,643	148,786	165,624
December	242,993	195,595	150,718	178,657
Total	2,805,770	2,086,562	2,228,215	1,924,750

Shipments of Magnesium Mill Products

As reported by the Industry Division, Bureau of the Census

All data are in Thousands of Pounds

Month	1955	1954	1953	1952
January	1,776	972	1,313	1,646
February	1,648	1,058	1,454	1,759
March	1,947	1,136	1,601	1,723
April	1,756	892	1,708	1,756
May	1,836	1,129	1,699	1,786
June	1,686	1,312	1,192	1,427
July	1,437	1,032	1,589	1,390
August	1,742	1,111	1,433	1,438
September	2,159	1,183	1,254	1,299
October	1,667	1,002	1,409	1,408
November	1,955	1,243	1,314	1,177
December	1,577	1,673	919	1,440
Total	21,186	13,743	16,885	18,249

1955 Shipments of Nonferrous Castings

As reported by the Industry Division, Bureau of the Census

All data are in Thousands of Pounds

Month	Copper	Aluminum	Zinc	Magnesium	Lead
January	72,233	64,414	58,586	2,305	1,734
February	75,253	66,869	58,585	2,160	1,571
March	92,149	78,958	71,811	2,572	1,537
April	84,183	73,049	71,595	2,633	1,614
May	85,008	71,691	63,735	2,399	1,530
June	90,476	68,473	66,569	2,367	2,045
July	65,816	55,033	47,928	1,920	1,684
August	87,206	64,864	62,677	2,176	1,904
September	89,600	67,069	62,030	2,478	1,924
October	91,192	72,197	71,689	2,302	1,789
November	90,345	75,065	75,099	2,325	1,896
December	88,287	75,275	70,950	2,255	1,817
Total	1,011,748	832,957	781,254	27,892	21,045

1955 Tin Production, Consumption and Stocks

All data are in long tons

Month	Production, Pig	Imports		Consumption, Pig	Exports‡	Stocks,* Pig	Price,† Pig
		Ore	Bars, Pigs				
January	2,608	1,857	4,143	6,900	175	14,751	$.8727
February	2,728	1,312	6,385	7,280	174	14,761	.9077
March	2,582	1,769	6,026	8,050	177	14,944	.9104
April	2,298	2,437	3,918	7,820	185	13,513	.9139
May	1,842	1,861	5,454	7,965	48	15,616	.9137
June	1,106	1,163	5,615	7,785	83	13,675	.9364
July	1,147	2,116	5,449	6,640	4	16,362	.9683
August	1,986	2,180	5,520	7,985	91	16,348	.9646
September	2,003	819	5,924	7,960	20	16,509	.9626
October	2,036	1,443	5,975	7,825	71	17,161	.9609
November	2,092	1,966	5,010	7,810	9	17,448	.9787
Total—11 Months, 1955	22,428	18,923	59,419	84,020	1,037	....	$.93544
Total—11 Months, 1954	26,986	20,121	60,072	75,390	....	16,872	$.92094

*—End of Month. †—Straits (N. Y.), Dollars per lb. ‡—Including re-exports. §—Average for 11 months.

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS

Due to space limitations basic models only are presented for each of the companies represented. Variations, to fit the needs of the individual user, are available from any of the manufacturers listed.

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt Rearward (Deg.)	MAST: Tilt Forward (Deg.)	OVERALL DIMENSIONS: Load Center (In.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast Collapsed	Height (In.): Mast Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Allis-Chalmers																					
FB20-15	2000	3750	S	Fk	GE	Hyd	Y	10	5	15	62¾	30A	24‡	113‡	190½‡	168‡		62¾	10½	53¾	122¼
FPB20-15	2000	3870	S	Fk	GE	Hyd	Y	10	5	15	66⅞	30A	24‡	113‡	190½‡	168‡		69⅝	16¼	56¼	130⅝
FB20-24	2000	4180	S	Fk	GE	Hyd	Y	10	5	24	62¾	30A	24‡	113‡	190½‡	168‡		62¾	10¼	53¾	122¼
FPB20-24	2000	4150	S	Fk	GE	Hyd	Y	10	5	24	66⅞	30A	24‡	113‡	190½‡	168‡		69⅝	16¼	56¼	130⅝
FT30-15	3000	4963	S	Fk	GE	Hyd	Y	10	5	15	74⅜	30A	24‡	113‡	194½‡	168‡		70	7	63½	82†
FTD30-15	3000	5070	S	Fk	DE	Hyd	Y	10	5	15	74⅜	30A	24‡	113‡	194½‡	168‡		70	7	60½	82†
FT30-24	3000	5718	S	Fk	GE	Hyd	Y	10	5	24	76¼	36A	24‡	113‡	194½‡	168‡		72	7	63½	84†
FTD30-24	3000	5825	S	Fk	DE	Hyd	Y	10	5	24	76¼	36A	24‡	113‡	194½‡	168‡		72	7	63½	84†
FT40-18	4000	6210	S	Fk	GE	Hyd	Y	10	5	18	76¼	36A	24‡	113‡	194½‡	168‡		72	7	63½	84†
FTD40-18	4000	6310	S	Fk	DE	Hyd	Y	10	5	18	76¼	36A	24‡	113‡	194½‡	168‡		72	7	63½	84†
FT40-24	4000	6380	S	Fk	GE	Hyd	Y	10	5	24	81¼	36A	24‡	113‡	194½‡	168‡		77½	8½	65½	89½†
FTD40-24	4000	6480	S	Fk	DE	Hyd	Y	10	5	24	81¼	36A	24‡	113‡	194½‡	168‡		77½	8½	65½	89½†
FTP40-24	4000	7275	S	Fk	GE	Hyd	Y	10	5	24	91	36A	24‡	113‡	194½‡	168‡		86	15½	72	103½
FTPD40-24	4000	7375	S	Fk	DE	Hyd	Y	10	5	24	91	36A	24‡	113‡	194½‡	168‡		86	15½	72	103½
FTB50-24	5000	7175	S	Fk	GE	Hyd	Y	10	5	24	84	36A	24‡	113‡	194½‡	168‡		79½	8	67	92
FTBD50-24	5000	7275	S	Fk	DE	Hyd	Y	10	5	24	84	36A	24‡	113‡	194½‡	168‡		79½	8	67	92
FT50-24	5000	7840	S	Fk	GE	Hyd	Y	10	5	24	88	36A	18½‡	113‡	200½‡	168‡		82½	7½	71	96½†
FTD50-24	5000	7940	S	Fk	DE	Hyd	Y	10	5	24	88	36A	18½‡	113‡	200½‡	168‡		82½	7½	71	96½†
FT60-24	6000	9025	S	Fk	GE	Hyd	Y	10	5	24	93	42A	18½‡	113‡	200½‡	168‡		88	9½	74½	102†
FTD60-24	6000	9125	S	Fk	DE	Hyd	Y	10	5	24	93	42A	18½‡	113‡	200½‡	168‡		88	9½	74½	102†
FTP60-24	6000	10400	S	Fk	GE	Hyd	Y	10	5	24	104¾	42A	18½‡	113‡	200½	168‡		111	20	91	131†
FTPD60-24	6000	10500	S	Fk	DE	Hyd	Y	10	5	24	104¾	42A	18½‡	113‡	200½	168‡		111	20	91	131†
FT80-24	8000		S	Fk	GE	Hyd	Y	10	5	24	100½	42A	8½‡	113‡	200½	168‡		96	13¾	77¼	111†
FTD80-24	8000		S	Fk	DE	Hyd	Y	10	5	24	100½	42A	8½‡	113‡	200½	168‡		96	13¾	77¼	111†
FTP30-24	3000	6375	S	Fk	GE	Hyd	Y	10	5	24	88	36A	24	113‡	194½‡	168‡		86	15½	72	103½
FTPD30-24	3000	6475	S	Fk	DE	Hyd	Y	10	5	24	88	36A	24	113‡	194½‡	168‡		86	15½	72	103½
FT70-24	7000	9800	S	Fk	GE	Hyd	Y	10	5	24		42A	16½	113‡	194½‡	168‡		88	9½	75½	152¼
FTD70-24	7000	9900	S	Fk	DE	Hyd	Y	10	5	24		42A	16½	113‡	194½‡	168‡		88	9½	75½	152¼
Automatic																					
FFE-10	1000	2560	St	Fk	EM	Hyd	Y	10	5	24A	53⅝	36A	55	68A	107½	107A	120½	55†	2½†	54†	102†
FFE-15	1500	3160	St	Fk	EM	Hyd	Y	10	5	24A	53⅝	36A	55	68A	107½	107A	120½	55†	2½†	54†	102†
FFE-20	2000	3920	St	Fk	EM	Hyd	Y	10	5	24A	53⅝	36A	55	68A	107½	107A	120½	55†	2½†	54†	102†
FFE-30	3000	6350*	St	Fk	EM	Hyd	Y	10	5	24A	111½	36A	52	68A	118A	102A	118A	61	2½	58	108½
Shipper BF-15	1500	4395*	S	Fk	EM	Hyd	Y	10	5	18A	58¼	30A	56	68A	118A	108A	144	56†	2½†	54†	100†
BF-15	1500	4500*	S	Fk	EM	Hyd	Y	10	5	18A	58¼	30A	66	83A	147A	132A	168	56†	2½†	54†	100†
Shipper BF-20	2000	5180*	S	Fk	EM	Hyd	Y	10	5	24A	61⅝	36A	56	68A	118A	108A	144	57†	2½†	57†	107†
BF-20	2000	5669*	S	Fk	EM	Hyd	Y	10	5	24A	71	36A	66	83A	147A	132A	168	67†	6†	60†	117†
BF-30	3000	6388*	S	Fk	EM	Hyd	Y	10	5	24A	74	36A	66	83A	147A	132A	168	69†	5†	61†	119†
BF-40	4000	7379*	S	Fk	EM	Hyd	Y	10	5	24A	78	36A	66	83A	147A	132A	168	71†	4†	64†	121†
BF-40AE	4000	7250*	St	Fk	EM	Hyd	Y	10	5	18A	82¾	36A	66	83A	147A	132A	168	72†	2½†	66†	122†
CF-10	1000	4450*	S	Fk	EM	Hyd	Y	10	3	24A	64⅞	36A	66	83A	147A	132A	162	62†	0†	58†	110†
CF-15	1500	4450*	S	Fk	EM	Hyd	Y	10	3	24A	64⅞	36A	66	83A	147A	132A	162	62†	0†	58†	110†
CF-20	2000	4760*	S	Fk	EM	Hyd	Y	10	3	24A	65¾	36A	66	83A	147A	132A	162	62†	0†	58†	110†
CF-30	3000	5475*	S	Fk	EM	Hyd	Y	10	3	24A	69¼	36A	66	83A	147A	132A	162	65†	0†	62†	114†
CF-40	4000	5490*	S	Fk	EM	Hyd	Y	10	3	15A	69¼	36A	66	83A	147A	132A	162	65†	0†	62†	114†
CLA	800	1540	W	Fk	EM	Hyd	N	10	5	18A	49¾	30A	69	83A	83A	69A	93				
CLB	1000	1570	W	Fk	EM	Hyd	N	10	5	18A	49¾	36A	69	83A	83A	69A	93				
CLTA	650	1790	W	Fk	EM	Hyd	Y	10	5	18A	49¾	36A	68½	83A	150½A	136A	160				
CLTB	810	1820	W	Fk	EM	Hyd	Y	10	5	18A	49¾	36A	68½A	83A	150½A	136A	160				
ESRT-20	2000	3200	St	Fk	EM	Hyd	Y			24A	67¼▲	Opt	20	83▲	146½A	130A	150½A				
ESRT-40	4000		St	Fk	EM	Hyd	Y	N	N	18A	74¼■	36A	20	83A	146½A	130A	150½				78°
ESST-20	2000		St	Fk	EM	Hyd	Y	N	N	24A		42A	67½	83A	148A	132½A					
ESST-30	3000		St	Fk	EM	Hyd	Y	N	N	24A		42A	68½	83A	146½A	130A					
ESST-40	4000		St	Fk	EM	Hyd	Y	N	N	24A		42A	68½	83A	146½A	130A					
FF-10	1000	2474*	S	Fk	EM	Hyd	Y	12½	2½	24A	82¾	36A	68	78A	144A	134A	170	80†	0†	82†	91½†
FF-15	1500	2871*	S	Fk	EM	Hyd	Y	12½	2½	15A	83¼	30A	68	78A	144A	134A	170	80†	0†	82†	91½†
GLF-40	4000	7600	S	Fk	GE	Hyd	Y	10	5	24A	79⅝	36A	69	83A	143½	130	149	75†	0†	67†	126†
GLF-50	5000	8100	S	Fk	GE	Hyd	Y	10	5	24A	82¾	36A	69	83A	143½	130	149	78†	0†	69†	129†
GLF-60	6000	8600	S	Fk	GE	Hyd	Y	10	5	24A	85⅝	42A	69	83A	143½	130	149	80†	0†	73†	137†
GLF-70	7000		S	Fk	GE	Hyd	Y	10	5	24	97¾	42	24	83A	138½	110	135				
GLF-80	8000		S	Fk	GE	Hyd	Y	10	5	24	99⅝	42	24	83A	138½	110	135				
GLF-90	9000		S	Fk	GE	Hyd	Y	10	5	24	101¾	42	24	83A	138½	110	135				
GLF-100	10000	12200	S	Fk	GE	Hyd	Y	10	5	24A	103¾	42A	24	83A	138½	110A	135	93†		82†	151†
HF-200	20000	31970*	St	Fk	EM	Hyd	N	N	N	42A			68A	127A	127A	88A					
HF-250	25000		St	Fk	EM	Hyd	N	N	N	48A			68A	127A	127A	88A					
HF-300	30000	43500*	St	Fk	EM	Hyd	N	N	N	48A			68A	129A	129A	88A					
HF-400	40000	56400*	St	Fk	EM	Hyd	N	N	N	48A			72A	118A	129A	72A					
HF-500	50000	65500*	St	Fk	EM	Hyd	N	N	N	48A			61A	110A	118A	61A					
HF-600	60000	75800*	St	Fk	EM	Hyd	N	N	N	48A			61A	124A	124A	61A					
HF-800	80000	76000*	St	Fk	EM	Hyd	N	N	N	30A			61A	124A	124A	61A					
LF-30	3000	7480*	St	Fk	EM	Hyd	Y	10	5	24A	78½	36A	64	83A	143A	124A	160	77†	6†	67†	128†
LF-40	4000	8600*	St	Fk	EM	Hyd	Y	10	5	24A	82½	36A	64	83A	143A	124A	160	80†	5†	71†	131†
LF-50	5000	9330*	St	Fk	EM	Hyd	Y	10	5	24A	82½	36A	64	83A	143A	124A	160	80†	4†	71†	131†
LF-60	6000	10200*	St	Fk	EM	Hyd	Y	10	5	24A	83⅝	42A	64	83A	143A	124A	160	81†	3†	74†	138†
LF-70	7000	11200*	St	Fk	EM	Hyd	Y	10	5	24A		42A	61	83A	137A	115A	151				
LF-80	8000	12075*	St	Fk	EM	Hyd	Y	10	5	24A		42A	61	83A	137A	115A	151				
LF-90	9000	12400*	St	Fk	EM	Hyd	Y	10	5	24A		42A	59	83A	134A	110A	146				
LF-100	10000	13400*	St	Fk	EM	Hyd	Y	10	5	24A		42A	59	83A	134A	110A	146				
LFS-30	3000	7480*	S	Fk	EM	Hyd	Y	10	5	24A		36A	64	83A	143A	124A	160				

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.)—Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt: Rearward (Deg.)	MAST: Tilt: Forward (Deg.)	OVERALL DIMENSIONS: Load Center (In.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast: Collapsed	Height (In.): Mast: Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	TURNING RADIUS (In.) With 40" x 48" Pallet: Inside	TURNING RADIUS (In.) With 40" x 48" Pallet: Intersecting Aisle Width	TURNING RADIUS (In.) With 40" x 48" Pallet: Minimum Aisle for Right Angle Stacking
Automatic—Cont'd. LFS-40	4000	8600*	S	Fk	EM	Hyd	Y	10	5	24^A	81 5/16	36^A	64	83^A	143^A	124^A	160	80†	5†	71†	131†
LFS-50	5000	9330*	S	Fk	EM	Hyd	Y	10	5	24^A	82 5/8	36^A	64	83^A	143^A	124^A	160	81†	4†	72†	132†
LFS-60	6000	10200*	S	Fk	EM	Hyd	Y	10	5	24^A	84 1/2	42^A	64	83^A	143^A	124^A	160	81†	3†	74†	138†
LFS-70	7000	11200*	S	Fk	EM	Hyd	Y	10	5	24^A	90 5/8	42^A	61	83^A	137^A	115^A	151	85†	2†	79†	145†
LFS-80	8000	12075*	S	Fk	EM	Hyd	Y	10	5	24^A	92 1/2	42^A	61	83^A	137^A	115^A	151	85†	2†	79†	145†
LFS-90	9000	12400*	S	Fk	EM	Hyd	Y	10	5	24^A	93 7/8	42^A	59	83^A	134^A	110^A	146	88†	2†	80†	148†
LFS-100	10000	13400*	S	Fk	EM	Hyd	Y	10	5	24^A	95 1/2	42^A	59	83^A	134^A	110^A	146	88†	2†	80†	148†
RTT	2000	4000*	S	Fk	EM	Hyd	Y	10	5	24^A	60 1/4	36^A	68	83^A	147^A	132^A	168	60 1/2‡†	3†	57†	106†
SCL	2000	2780	W	Fk	EM	Hyd	N	18	3	24^A	64 1/2	36^A	67	83^A	83^A	67^A	103	.....	.....	.....	.....
SCLH	2500	3260	W	Fk	EM	Hyd	N	18	3	24^A	67 3/4	36^A	67	83^A	83^A	67^A	103	.....	.....	.....	.....
SCLT	2000	3015	W	Fk	EM	Hyd	Y	18	3	24^A	64 1/2	36^A	67	83^A	83^A	131^A	167	.....	.....	.....	.....
SCLTH	2500	3495	W	Fk	EM	Hyd	Y	18	3	24^A	67 3/4	36^A	67	83^A	83^A	67^A	103	.....	.....	.....	.....
SO	4000	2200	W	Ptf	EM	Hyd	N	N	N	18^A	.....	36^A	66	83^A	83^A	66^A	102	.....	0	.....	.....
SOT	4000	2600	W	Fk	EM	Hyd	Y	N	N	18^A	.....	36^A	.....	83^A	.....	128^A	164	.....	.....	.....	.....
SPH-4	4000	1900	W	Ptf	EM	Hyd	N	N	N	24^A	.....	48^A	70	83^A	83^A	70^A	85	.....	0	.....	.....
SPH-5	5000	2050	W	Ptf	EM	Hyd	N	N	N	24^A	.....	48^A	70	83^A	83^A	70^A	85	.....	0	.....	.....
SPL-4	4000	1800	W	Ptf	EM	Hyd	N	N	N	24^A	.....	48^A	70	83^A	83^A	70^A	85	.....	0	.....	.....
SPL-5	5000	1950	W	Ptf	EM	Hyd	N	N	N	24^A	.....	48^A	70	83^A	83^A	70^A	85	.....	0	.....	.....
SS	4000	2450	W	Fk	EM	Hyd	N	N	N	18^A	.....	36^A	66	83^A	83^A	66^A	102	.....	.....	.....	.....
SST	4000	3000	W	Fk	EM	Hyd	Y	N	N	18^A	.....	36^A	.....	83^A	.....	128^A	164	.....	.....	.....	.....
THR-12	12000	17800*	St	Fk	EM	Ch	N	10	3	30^A	112 5/8	48^A	.....	83^A	83^A	49	85	106†	5†	91†	178†
THR-14	14000	20650*	St	Fk	EM	Ch	N	10	3	36^A	117 1/2	48^A	.....	83^A	83^A	49	85	116†	10†	97†	184†
THR-15	15000	21450*	St	Fk	EM	Ch	N	10	3	36^A	117 1/2	48^A	.....	83^A	83^A	49	85	116†	10†	97†	184†
THR-16	16000	22900*	St	Fk	EM	Ch	N	10	3	39^A	117 1/2	48^A	.....	83^A	83^A	49	85	116†	8†	98†	184†
THR-18	18000	24200*	St	Fk	EM	Ch	N	N	N	39^A	117	48^A	.....	83^A	83^A	49	85	116†	8†	98†	184†
THTF-M-10	10000	16125*	St	Fk	EM	Ch	Y	10	3	24^A	111 1/4	42^A	.....	83^A	.....	98^A	134	106†	2†	92†	169†
TLN-2	4000	3650	St	Ptf	EM	Ch	N	N	N	30^A	.....	.....	60^A	79 1/2^A	79 1/2	60^A	79 1/2	97†	48†	61†	.....
TLN-3	6000	4425	St	Ptf	EM	Ch	N	N	N	30^A	.....	.....	60^A	81^A	81	60^A	81	99†	48†	62†	.....
TLO-5	10000	6000	St	Ptf	EM	Ch	N	N	N	30^A	.....	.....	60^A	83^A	83	60^A	83	118†	62†	69†	.....
Baker FL-10	1000	2900	S	Fk	EM	Hyd	Y	10	3	24^A	60 1/2	36^A	60^A	91‡	161‡	144‡	166^A	59	4	55†	117 1/4‡
FLE-10	1000	2900	S	Fk	EM	Hyd	Y	10	3	24^A	60 1/2	36^A	5^A	91‡	161‡	144‡	166^A	59	4	55†	117 1/4‡
FL-15	1500	3950	S	Fk	EM	Hyd	Y			24^A	60 1/2	36^A	60^A	91‡	161‡	144‡	166^A	59	4	55†	117 1/4‡
FLE-15	1500	3950	S	Fk	EM	Hyd	Y	10	3	24^A	60 1/2	36^A	5^A	91‡	161‡	144‡	166^A	59	4	55†	117 1/4‡
FS-15	1500	3400	S	Fk	EM	Hyd	Y	10	3	24^A	64 3/4	36^A	60^A	91‡	161‡	144‡	165 3/4^A	62	5	58†	124 1/2‡
FSE-15	1500	3400	S	Fk	EM	Hyd	Y	10	3	24^A	64 3/4	36^A	5^A	91‡	161‡	144‡	165 3/4^A	62	5	58†	124 1/2‡
FS-20	2000	4000	S	Fk	EM	Hyd	Y	10	3	24^A	68 1/4	36^A	60^A	91‡	161‡	144‡	165 3/4^A	65	5	60†	127 1/2‡
FSE-20	2000	4000	S	Fk	EM	Hyd	Y	10	3	24^A	68 1/4	36^A	5^A	91‡	161‡	144‡	165 3/4^A	65	5	60†	127 1/2‡
FS-25	2500	4300	S	Fk	EM	Hyd	Y	10	3	24^A	72 1/4	36^A	60^A	91‡	162‡	144‡	167 1/4^A	66	5	62†	130 3/4‡
FSE-25	2500	4300	S	Fk	EM	Hyd	Y	10	3	24^A	72 1/4	36^A	5^A	91‡	162‡	144‡	167 1/4^A	66	5	62†	130 3/4‡
FT-20	2000	3300	S	Fk	EM	Hyd	Y	10	10	24^A	67	36^A	62 1/2^A	91‡	161‡	144‡	165 3/4^A	65 1/2	21 1/2	60†	125‡
FTE-20	2000	3300	S	Fk	EM	Hyd	Y	10	10	24^A	67	36^A	12^A	91‡	161‡	144‡	165 3/4^A	65 1/2	21 1/2	60†	125‡
FT-30	3000	5140	S	Fk	EM	Hyd	Y	10	5	24^A	72 1/2	36^A	58 1/4^A	91‡	162‡	144‡	167 1/4^A	73 1/2	.....	66 1/2†	135‡
FTE-30	3000	5140	S	Fk	EM	Hyd	Y	10	5	24^A	72 1/2	36^A	5^A	91‡	162‡	144‡	167 1/4^A	73 1/2	.....	66 1/2†	135‡
FT-40	4000	5350	S	Fk	EM	Hyd	Y	10	5	24^A	75 3/4	36^A	58 1/4^A	91‡	162‡	144‡	167 1/4^A	74	.....	66 1/2†	135 1/2‡
FTE-40	4000	5350	S	Fk	EM	Hyd	Y	10	5	24^A	75 3/4	36^A	5^A	91‡	162‡	144‡	167 1/4^A	74	.....	66 1/2†	135 1/2‡
FT-50	5000	6300	S	Fk	EM	Hyd	Y	10	5	24^A	79 5/8	36^A	58 1/4^A	95‡	162‡	144‡	167 1/4^A	80	5 1/4	73 1/2†	145 1/4‡
FTE-50	5000	6300	S	Fk	EM	Hyd	Y	10	5	24^A	79 5/8	36^A	12^A	95‡	162‡	144‡	167 1/4^A	80	5 1/4	73 1/2†	145 1/4‡
FT-60	6000	7000	S	Fk	EM	Hyd	Y	10	5	24^A	88 1/2	36^A	58 1/4^A	95‡	162‡	144‡	167 1/4^A	81 1/2	6	73 1/2†	145 1/4‡
FTE-60	6000	7000	S	Fk	EM	Hyd	Y	10	5	24^A	88 1/2	36^A	12^A	95‡	162‡	144‡	167 1/4^A	81 1/2	6	73 1/2‡†	145 1/4‡
FT-70	7000	8270	S	Fk	EM	Hyd	Y	10	5	24^A	89 3/4	36^A	58 1/4^A	83‡	138‡	120‡	153 1/4^A	86 1/4	6	74 3/4†	150‡
FTE-70	7000	8270	S	Fk	EM	Hyd	Y	10	5	24^A	89 3/4	36^A	12^A	83‡	138‡	120‡	153 1/4^A	86 1/4	6	74 3/4†	150‡
FC-30	3000	4800	St	Fk	EM	Hyd	Y	10	3	24^A	76 1/4	36^A	58 1/4^A	91‡	162‡	144‡	167 1/4^A	74	5	66†	138‡
FCE-30	3000	4800	St	Fk	EM	Hyd	Y	10	3	24^A	76 1/4	36^A	5^A	91‡	162‡	144‡	167 1/4^A	74	5	66†	138‡
FC-40	4000	5400	St	Fk	EM	Hyd	Y	10	3	24^A	79 1/4	36^A	58 1/4^A	91‡	162‡	144‡	167 1/4^A	74	5	66†	138‡
FCE-40	4000	5400	St	Fk	EM	Hyd	Y	10	3	24^A	79 1/4	36^A	5^A	91‡	162‡	144‡	167 1/4^A	74	5	66†	138‡
FC-50	5000	7300	St	Fk	EM	Hyd	Y	10	3	24^A	87	36^A	58 1/4^A	95‡	162‡	144‡	167 1/4^A	81	8	72†	.....
FCE-50	5000	7300	St	Fk	EM	Hyd	Y	10	3	24^A	87	36^A	5^A	95‡	162‡	144‡	167 1/4^A	81	8	72†	.....
FC-60	6000	8000	St	Fk	EM	Hyd	Y	10	3	24^A	92 1/4	36^A	58 1/4^A	95‡	162‡	144‡	167 1/4^A	82	8	72†	149‡
FCE-60	6000	8000	St	Fk	EM	Hyd	Y	10	3	24^A	92 1/4	36^A	5^A	95‡	162‡	144‡	167 1/4^A	82	8	72†	149‡
JOM-70	7000	8400	St	Fk	EM	Hyd	N	12	5	24^A	97	42^A	47^A	96‡	96‡	78 ‡	114^A	99	20	80†	156‡
JOMU-70	7000	8700	St	Fk	EM	Hyd	Y	12	5	24^A	97	42^A	19 1/2^A	96‡	162‡	144‡	180^A	99	20	80†	156‡
JOM-80	8000	9600	St	Fk	EM	Hyd	N	12	5	24^A	105 5/8	42^A	47^A	96‡	96‡	73‡	109^A	85	22	85†	165‡
JOMU-80	8000	9900	St	Fk	EM	Hyd	Y	12	5	24^A	105 5/8	42^A	22^A	96‡	148 1/2‡†	128 1/2‡†	164 1/2^A	85	22	85†	165‡
JOM-100	10000	10500	St	Fk	EM	Hyd	N	12	5	24^A	111 5/8	42^A	47^A	96‡	96‡	73‡	109^A	92	24	92†	174‡
JOMH-100	10000	10800	St	Fk	EM	Hyd	Y	12	5	24^A	111 5/8	42^A	22^A	96‡	148 1/2‡†	128 1/2‡†	164 1/2^A	92	24	92†	174‡
FCE-120	12000	15500	St	Fk	EM	Hyd	Y	10	3	30^A	115 1/4	48^A	55^A	95 1/2‡†	156‡	120‡	158^A	116	26	98†	176‡
FCE-140	14000	19400	St	Fk	EM	Hyd	N	10	3	36^A	121 1/4	48^A	60^A	95 1/2‡†	95 1/2‡	63‡	101^A	124	26	100†	192‡
FCE-150	15000	19400	St	Fk	EM	Hyd	N	10	3	24^A	121 1/4	48^A	60^A	95 1/2‡†	95 1/2‡	63‡	101^A	124	26	100†	192‡
H-3	6000	4400	St	Ptf	EM	Hyd	N	0	0	24^A	74	55^A	67^A	83‡	83‡	67‡	86^A	105	45	68†	160††
HH-3	6000	5200	St	Ptf	EM	Hyd	Y	0	0	24^A	74	55^A	32^A	83‡	115‡	119‡	138^A	105	45	68†	160††
H-5	10000	5450	St	Ptf	EM	Hyd	N	0	0	24^A	81 5/8	60^A	65^A	88‡	88‡	63 1/2‡†	82^A	115 1/2	56	72†	181 1/2‡††
HH-5	10000	6000	St	Ptf	EM	Hyd	Y	0	0	24^A	81 5/8	60^A	32^A	88‡	105‡	108‡	127^A	115 1/2	56	72†	181 1/2‡††
EY-40	4000	6400	S	Fk	GE	Hyd	Y	10	5	18^A	100 1/2	36^A	N	87‡	144‡	122‡	147 1/4^A	90	13	.....	158‡
FG-30	3000	6100	S	Fk	GE	Hyd	Y	10	3	24^A	75 1/4	36^A	58 1/2^A	91‡	162‡	144‡	167^A	73 1/4	5 1/2	65 1/2†	134 1/2‡
FGE-30	3000	6100	S	Fk	GE	Hyd	Y	10	3	24^A	75 3/4	36^A	5^A	91‡	162‡	144‡	167^A	73 1/4	5 1/2	65 1/2†	134 1/2‡
FG-40	4000	6800	S	Fk	GE	Hyd	Y	10	3	24^A	80	36^A	58 1/2^A	91‡	162‡	144‡	167^A	75	5 1/2	68†	136 1/2‡
FGE-40	4000	6800	S	Fk	GE	Hyd	Y	10	3	24^A	80	36^A	5^A	91‡	162‡	144‡	167^A	75	5 1/2	68†	136 1/2‡
FG-50	5000	8500	S	Fk	GE	Hyd	Y	10	5	24^A	83 7/8	36^A	58 1/2^A	95‡	162‡	144‡	167^A	84	5 1/2	74 1/2†	148‡
FGE-50	5000	8500	S	Fk	GE	Hyd	Y	10	5	24^A	83 7/8	36^A	12^A	95‡	162‡	144‡	167^A	84	5 1/2	74 1/2†	148‡
FG-60	6000	9100	S	Fk	GE	Hyd	Y	10	5	24^A	93 5/8	36^A	58 1/2^A	95‡	162‡	144‡	167^A	85 1/2	6	74 1/2†	149 1/2‡
FGE-60	6000	9100	S	Fk	GE	Hyd	Y	10	5	24^A	93 5/8	36^A	12^A	95‡	162‡	144‡	167^A	85 1/2	6	74 1/2†	149 1/2‡
FG-70	7000	10017	S	Fk	GE	Hyd	Y	10	5	24^A	94 1/2	36^A	58 1/2^A	95‡	162‡	144‡	167^A	86 1/4	6	74 3/4†	150‡
FGE-70	7000	10017	S	Fk	GE	Hyd	Y	10	5	24^A	94 1/2	36^A	12^A	95‡	162‡	144‡	167^A	86 1/4	6	74 3/4†	150‡
FD-30	3000	6640	S	Fk	GE	Hyd	Y	10	3	24^A	78 5/8	36^A	58 1/2^A	91‡	162‡	144‡	167 1/4^A	73	8	68 1/2†	137‡

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt Rearward (Deg.)	MAST: Tilt Forward (Deg.)	OVERALL DIMENSIONS: Load Center (In.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast Collapsed	Height (In.): Mast Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Baker—Cont'd. FDE-30	3000	6640	S	Fk	GE	Hyd	Y	10	3	24[A]	78½	38[A]	5[A]	91	162	144	167½[A]	73	8	68½	137
FD-40	4000	7500	S	Fk	GE	Hyd	Y	10	3	24[A]	83	38[A]	58½[A]	91	162	144	167½[A]	78	8	69	142
FDE-40	4000	7500	S	Fk	GE	Hyd	Y	10	3	24[A]	83	38[A]	5[A]	91	162	144	167½[A]	78	8	69	142
FD-50	5000	8700	S	Fk	GE	Hyd	Y	10	3	24[A]	95½	38[A]	58½[A]	95	162	144	167½[A]	86	10	73½	154
FDE-50	5000	8700	S	Fk	GE	Hyd	Y	10	3	24[A]	95½	38[A]	12[A]	95	162	144	167½[A]	86	10	73½	154
FD-60	6000	9300	S	Fk	GE	Hyd	Y	10	3	24[A]	96	38[A]	58½[A]	95	162	144	167½[A]	87½	10	75½	157
FDE-60	6000	9300	S	Fk	GE	Hyd	Y	10	3	24[A]	96	38[A]	12[A]	95	162	144	167½[A]	87½	10	75½	157
60N			S	Fk	GE	Hyd	Y			24[A]											
FTDL-30	3000	4800	S	Fk	EM	Hyd	Y	10	5	24[A]	72½	38[A]	43½[A]	68	115	97	120½[A]	74		66½	135½
FTDL-40	4000	5400	S	Fk	EM	Hyd	Y	10	5	24[A]	75½	38[A]	43½[A]	68	115	97	120½[A]	74		66½	135½
FTDL-50	5000	7300	S	Fk	EM	Hyd	Y	10	5	24[A]	88½	38[A]	43½[A]	68	115	97	120½[A]	81½	6	73½	145½
FTDL-60	6000	8000	S	Fk	EM	Hyd	Y	10	5	24[A]	81½	38[A]	43½[A]	68	115	97	120½[A]	81½	6	73½	145½
FTDLE-30	3000	4800	S	Fk	EM	Hyd	Y	10	5	24[A]	72½	38[A]	27[A]	68	98	78	101½[A]	74		66½	135½
FTDLE-40	4000	550C	S	Fk	EM	Hyd	Y	10	5	24[A]	75½	38[A]	27[A]	68	98	78	101½[A]	74		66½	135½
FTDLE-50	5000	7300	S	Fk	EM	Hyd	Y	10	5	24[A]	81½	38[A]	24[A]	68	98	78	101½[A]	81½	6	73½	145½
FTDLE-60	6000	8000	S	Fk	EM	Hyd	Y	10	5	24[A]	88½	38[A]	24[A]	68	98	78	101½[A]	81½	6	73½	145½
FD-20	2000	4150	St	Fk	EM	Hyd	Y	10	5	24[A]	68	38[A]	62½[A]	91	161	144	165¾[A]	65½	2½	59¾	124
FCE-20	2000	4150	St	Fk	EM	Hyd	Y	10	5	24[A]	68	38[A]	12[A]	91	161	144	165¾[A]	65½	2½	59¾	124
FGD-20	2000	4300	S	Fk	GE	Hyd	Y	10	10	24[A]	65½	38[A]	62½[A]	91	161	144	165¾[A]	61½	2½	57	120
FGDE-20	2000	4300	S	Fk	GE	Hyd	Y	10	10	24[A]	65½	38[A]	12[A]	91	161	144	165¾[A]	61½	2½	57	120
FGF-40	4000	7140	S	Fk	GE	Hyd	Y	10	5	24[A]	85¾	38[A]	64½[A]	102	190	168	190[A]	79	5½	71	144
FGFE-40	4000	7140	S	Fk	GE	Hyd	Y	10	5	24[A]	85¾	38[A]	5[A]	102	190	168	190[A]	79	5½	71	144
TE-4	4000	11000	S	Fk	EM	Hyd	Y	5	5	24		40				130[A]					
T-6	6000	10000	S	Fk	GE	Hyd	Y	7	5	24		48				120[A]					
T-10A-G	10000	18600	S	Fk	GE	Hyd	Y	5	5	33		66½				144[A]	184¼	271		294	
T-30A-G	30000	43300	S	Fk	GE	Hyd	Y	5	5	39		78				144[A]	198	300			
T-10A-D	10000	19400	S	Fk	DE	Hyd	Y										184¼				
T-30A-D	30000	44100	S	Fk	DE	Hyd	Y										198				
T-12A-G	12000	19400	S	Fk	DE	Hyd	Y										184½				
T-12A-D	12000	20200	S	Fk	DE	Hyd	Y										184½				
Barrett NTF-20-60	2000	3535	W	Fk	EM	Hyd	N	N	N	24	58¼	48‡	60	83¼	83¼	80¼	83½	78	14	70	110½
NTF-20-45	2000	3285	W	Fk	EM	Hyd	N	N	N	24	58¼	48‡	45	68¼	68¼	45¼	68½	78	14	70	110½
TTF-20-S-60	2000	3620	W	Fk	EM	Hyd	N	10	2	24	58¼	48‡	60	83¼	83¼	80[A]	83½	78	14	70	110½
TTF-2-S-45	2000	3370	W	Fk	EM	Hyd	N	10	2	24	58¼	48‡	45	68¼	68¼	45¼	68½	78	14	70	110½
TTF-20-T-90	2000	3630	W	Fk	EM	Hyd	Y	10	2	24	58¼	48‡	45	68¼	113‡	90‡	113¼	78	14	70	110½
TTF-20-T-120	2000	3880	W	Fk	EM	Hyd	Y	10	2	24	58¼	48‡	60	83¼	143‡	120‡	143¼	78	14	70	110½
Champ 200	4000	7680	S	Fk	GE	Hyd	Y	9	6	24‡	120	42[A]	N	140‡	237‡	192‡	236				
300	4000	8180	S	Fk	GE	Hyd	Y	12	4	24‡	120	42[A]	N	140‡	237‡	192‡	236				
600	6000	9980	S	Fk	GE	Hyd	Y	12	6	24‡	137	72‡	N	162‡	282‡	240‡	280				
Clark ETR-1024	1000	1615	S	Fk	EM	Hyd	Y	10	3	38‡	53½	30[A]	6¼	84‡	149‡	130‡		58	12	51½	68½
ECE-2024	2000	3400	S	Fk	EM	Hyd	Y	10	3	40‡	63¾	30[A]	6½	87‡	150½‡‡	132‡		62	6¼	57	74
ESW-2024	2000	4900	S	Fk	EM	Hyd	Y	14	4	40‡	69¼	30[A]	7	96‡	148½‡‡	130‡		62	3¼	60	74½
ECL-3024	3000	5030	S	Fk	EM	Hyd	Y	10	3	40‡	74¾	36[A]	6¾	102	177½‡‡	156‡		69	8	63½	84½
EX-ECL-3024	3000	7640	S	Fk	EM	Hyd	Y	7	3	40‡	82¾	36[A]	7½	102	177½‡‡	156‡		84	10	75	
ECL-4024	4000	5480	S	Fk	EM	Hyd	Y	10	3	40‡	76¾	36[A]	6¾	102	177½‡‡	156‡		78	9	68¼	93¾
EX-ECL-4024	4000	8290	S	Fk	EM	Hyd	Y	7	3	40‡	82¾	36[A]	7½	102	177½‡‡	156‡		84	10	75	
ECS-4024	4000	5985	S	Fk	EM	Hyd	Y	10	3	40‡	76¾	36[A]	6¾	102	177½‡‡	156‡		71	8	65½	86
ECL-5024	5000	6833	S	Fk	EM	Hyd	Y	10	3	40‡	80¾	36[A]	6¾	102	177½‡‡	156‡		78	9	68¼	93
EX-ECL-5024	5000	9000	S	Fk	EM	Hyd	Y	7	3	40‡	82¾	36[A]	7½	102	177½‡‡	156‡		85¼	10	76	
EVT-6024	6000	8073	S	Fk	EM	Hyd	Y	10	3	45‡	87	42[A]	25	117‡	203½‡‡	180‡		84	7	75½	99½
EVT-7024	7000	8653	S	Fk	EM	Hyd	Y	10	3	45‡	89	42[A]	25	117‡	203½‡‡	180‡		86	7	78	101½
TR-1024	1000	2505	S	Fk	GE	Hyd	Y	10	3	36‡	55½	30[A]	60¾	84‡	149‡	130‡		57	12	49	67½
CE-2024	2000	4250	S	Fk	GE	Hyd	Y	10	3	40‡	67¼	30[A]	7	87‡	150½‡‡	132‡		65	7¼	56	77½
CL-3024	3000	6500	S	Fk	GE	Hyd	Y	10	3	40‡	73½	36[A]	6¾	116‡	201½‡‡	180‡		71½	7	65	86½
CL-4024	4000	6800	S	Fk	GE	Hyd	Y	10	3	40‡	81½	36[A]	6¾	116‡	201½‡‡	180‡		78	11	67	93
CL-5024	5000	7800	S	Fk	GE	Hyd	Y	10	3	40‡	83¾	36[A]	6¾	116‡	201½‡‡	180‡		81½	10½	70	96½
UT-6024	6000	9500	S	Fk	GE	Hyd	Y	10	3	45‡	89¼	42[A]	25	117‡	203½‡‡	180‡		83	3	76	98½
UT-7024	7000	10200	S	Fk	GE	Hyd	Y	10	3	45‡	89¼	42[A]	25	117‡	203½‡‡	180‡		84¼	3	78	99¾
HUTS-7024	7000	10000	S	Fk	GD	Hyd	Y	10	3	45‡	94¾	42[A]	25	117‡	203½‡‡	180‡		92	7¼	78	107½
HUT-8024	8000	10725	S	Fk	GD	Hyd	Y	10	3	45‡	94¾	42[A]	25	117‡	203½‡‡	180‡		92	6	80	107½
HUTS-8024	8000	10775	S	Fk	GD	Hyd	Y	10	3	45‡	94¾	42[A]	25	117‡	203½‡‡	180‡		92	6	80	107½
HUT-100	10000	13050	S	Fk	GD	Hyd	Y	10	3	45‡	108¼	42[A]	7	116‡	194¾‡‡	164‡		100¾	7¾	89½	117¼
HUTS-100	10000	13100	S	Fk	GD	Hyd	Y	10	3	45‡	108¼	42[A]	7	116‡	194¾‡‡	164‡		100¾	7¾	89½	117¼
Y-20	2000	4700	S	Fk	GE	Hyd	Y	10	3	40‡	72¾	30[A]	7	90‡	153‡	132‡		71½	12	60	86
Y-40	4000	7005	S	Fk	GE	Hyd	Y	10	3	40‡	93‡‡	36[A]	6½	98½‡‡	166½‡‡	144‡		85½	10	73	103½
Y-60	6000	9760	S	Fk	GE	Hyd	Y	10	3	40‡	111½	42[A]	6¾	115‡	194¾‡‡	168‡		111	8	94	131¾
Y-100	10000	14360	S	Fk	GE	Hyd	Y	12	4	49‡	133¾	48[A]		150‡	249‡	210‡		135½	13½	116	158½
Y-150	15000	18230	S	Fk	GE	Hyd	Y	12	4	54‡	170½	48[A]	4½	153‡	255¾‡‡	210‡		165	24	136	192½
Y-160	16000	18820	S	Fk	GE	Hyd	Y	12	4	54‡	170½	48[A]	4½	150‡	255¾‡‡	210‡		165	24	136	192½
40-HP-7	4000	1925	W	Ptf	EM	Hyd	N				37½			83‡	83‡	66½‡‡		72¼		57	77½
40-HP-11	4000	1925	W	Ptf	EM	Hyd	N				37½			83‡	83‡	70½‡‡		72¼		57	77½
15-TF	1500	2414	W	Fk	EM	Hyd	N	10	3	30‡	60½	30[A]		83‡	83‡	66½‡‡		53¾		53	94¼
15-TTF	1500	2814	W	Fk	EM	Hyd	Y	10	3	30‡	60½	30[A]	64	83‡	148½‡‡	130‡		53¾		53	94¼
20-TF	2000	2714	W	Fk	EM	Hyd	N	10	3	30‡	62½	30[A]		83‡	83‡	66½‡‡		56½		54½	97
20-TTF	2000	3114	W	Fk	EM	Hyd	Y	10	3	30‡	62½	30[A]	64	83‡	148½‡‡	130‡		56½		54½	97
25-TF	2500	3114	W	Fk	EM	Hyd	N	18	3	30‡	66½	30[A]		83‡	83‡	66½‡‡		60¼		56¾	100¾
25-TTF	2500	3514	W	Fk	EM	Hyd	Y	18	3	30‡	66½	30[A]	64	83‡	148½‡‡	130‡		60¼		56¾	100¾
30-TF	3000	3314	W	Fk	EM	Hyd	N	18	3	30‡	68¾	30[A]		83‡	83‡	66½‡‡		62½		57¾	103
30-TTF	3000	3714	W	Fk	EM	Hyd	Y	18	3	30‡	68¾	30[A]	64	83‡	148½‡‡	130‡		62½		57¾	103
YR-80	8000	9000	S	Fk	GE	Hyd	N	12	6	39‡	115	42[A]		106‡	178‡	144‡		105	12	92	
Y-80	8000	12800	S	Fk	GE	Hyd	Y	12	4	48‡	146	42[A]	6	170‡	287‡	240‡		133		123	
YR-100	10000	13700	S	Fk	GE	Hyd	Y	12	4	48‡	146	42[A]	6	170‡	287‡	240‡		133		123	
Y-120	12000	14600	S	Fk	GE	Hyd	Y	12	4	48‡	146	42[A]	6	170‡	287‡	240‡		133		123	
Y-130	13000	16800	S	Fk	GE	Hyd	Y	12	4	48‡	165½	42[A]	6	170‡	290‡	240‡		152		141	
Y-150-L	15000	17300	S	Fk	GE	Hyd	Y	12	4	48‡	185½	42[A]	6	170‡	290‡	240‡		175		158	
Y-150-S	15000	18000	S	Fk	GE	Hyd	Y	12	4	48‡	165½	42[A]	6	170‡	290‡	240‡		152		141	
Y-180	18000	18500	S	Fk	GE	Hyd	Y	12	4	48‡	185½	42[A]	6	170‡	290‡	240‡		175		158	

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER		MAST			OVERALL DIMENSIONS								TURNING RADIUS (In.) With 40" x 48" Pallet			
								Tilt			Length (In.)		Height (In.)								
					Motive	Lifting	Telescopic	Rearward (Deg.)	Forward (Deg.)	Load Center (In.)	Less Forks	Fork (Max.)	Free Lift	Mast Collapsed	Mast Extended	Lifting	Overall—Including Carriage or Backguard	Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Clark—Cont'd Y-200	20000	20700	S	Fk	GE	Hyd	Y	12	4	48‡	185½	42^A	6	172‡	292‡	240‡		180			
..... Y-260	26000	31000	S	Fk	GE	Hyd	N	12	4	84‡	224½	72^A	.....	266‡	266‡	240‡		210			
Crescent JCL-1-15	1000	2120	S	Fk	EM	Hyd	Y	10	3	18	60⅛	.....	29	83‡	137‡	120‡	137	61‡	.....	54‡	87⅝‡‡
..... JCL-1	.....	2445	S	Fk	EM	Hyd	Y	10	3	24	64⅛	.....	29	83‡	137‡	120‡	137	61‡	.....	54‡	88⅝‡‡
..... JCL-1.5	.....	2975	S	Fk	EM	Hyd	Y	10	3	24	65⅛	.....	29	83‡	137‡	120‡	137	62‡	.....	54‡	106¼
..... JCH-2	2000	.....	S	Fk	EM	Hyd	Y	10	5	24	63	.....	66	83‡	138‡	130‡	136	63‡	.....	57‡	120‡
..... JCH-3	3000	.....	S	Fk	EM	Hyd	Y	10	5	24	65½	.....	64½	83‡	153‡	130‡	153	66‡	.....	64‡	126‡
..... JEH-1	1000	.....	St	Fk	EM	Hyd	Y	5	3	24	53	.....	66	83‡	137‡	120‡	137	48‡	.....	49‡	102‡
..... JEH-2-18	2000	.....	St	Fk	EM	Hyd	Y	5	3	18	55½	.....	66	83‡	137‡	130‡	137	50‡	.....	52‡	104‡
..... JEH-2	2000	.....	St	Fk	EM	Hyd	Y	5	3	24	57½	.....	66	83‡	137‡	130‡	137	52‡	.....	53‡	106‡
..... JEH-3	3000	.....	St	Fk	EM	Hyd	Y	5	3	24	64½	.....	64½	83‡	152‡	130‡	152	58‡	.....	58‡	114‡
..... MEH-4	4000	.....	St	Fk	EM	Hyd	Y	5	3	24	68¾	.....	63⅝	83‡	152‡	130‡	152	60‡	.....	62‡	118‡
..... MCH-4	4000	.....	S	Fk	EM	Hyd	Y	10	5	24	71½	.....	63⅝	83‡	153‡	130‡	153	70‡	.....	68‡	136‡
..... MCH-5	5000	.....	S	Fk	EM	Hyd	Y	10	5	24	76¾	.....	64	83‡	152½‡‡	130‡	152½	73‡	.....	68‡	130‡
..... MCH-6	6000	.....	S	Fk	EM	Hyd	Y	10	5	24	82¾	.....	64	83‡	146½‡‡	124‡	146½	83‡	.....	70‡	144‡
..... MCL-7	7000	.....	S	Fk	EM	Hyd	Y	10	5	24	94½	.....	7¼	83‡	142½‡‡	120‡	142½	89‡	.....	76‡	.....
..... MCL-8	8000	.....	S	Fk	EM	Hyd	Y	10	5	24	94½	.....	7¼	83‡	142½‡‡	120‡	142½	89‡	.....	76‡	.....
Elwell-Parker E-12-20	20000	16000	St	Ptf	EGD	Hyd	N	.....	.....	.....	153	82⅛	48	83⅛	.....	484	.....	149	79	88	206
..... E-12-30	30000	22000	St	Ptf	EGD	Hyd	N	.....	.....	.....	180	94⅛	60	108⅛	.....	604	.....	169	87	107	247
..... E-12-40	40000	28000	St	Ptf	EGD	Hyd	N	.....	.....	.....	184	84⅛	60	108⅛	.....	604	.....	.....	103	124	269
..... E-12-60	60000	28600	St	Ptf	EGD	Hyd	N	.....	.....	.....	195	94⅛	60	116⅛	.....	604	.....	193	108	118	274
..... E-12-80	80000	29600	St	Ptf	EGD	Hyd	N	.....	.....	.....	208	102⅛	72	134⅛	.....	724	.....	220	113	134	294
..... F-26T2	2000	5000**	S	Fk	EM	Hyd	Y	10	5	24	67½	48‡	17	83⅛	148‡	130‡	149	67	8	58	111⅝
..... F-26T2	2000	4800**	S	Fk	EM	Hyd	Y	10	5	24	67½	48‡	50	88⅛	118‡	100‡	119	67	8	58	111⅝
..... F-30T3	3000	7300**	S	Fk	EM	Hyd	Y	12	5	24	73¼	48‡	17	83⅛	147‡	130‡	149	84	9	68	129
..... F-30T3	3000	7000**	S	Fk	EM	Hyd	Y	12	5	24	73¼	48‡	50	88⅛	116‡	100‡	120	84	9	68	129
..... F-30T4	4000	7800**	S	Fk	EM	Hyd	Y	12	5	24‡	78⅞	48‡	17	83⅛	147‡	130‡	149	83	10	70	134⅝
..... F-30T4	4000	7400**	S	Fk	EM	Hyd	Y	12	5	24‡	78⅛	48‡	50	88⅛	117‡	100‡	119	83	10	70	134⅝
..... F-31T6	6000	9900**	S	Fk	EM	Hyd	Y	12	5	24‡	82¾	48‡	17	86⅛	145‡	126‡	147	87	11	72	139¾
..... F-31T6	6000	9650**	S	Fk	EM	Hyd	Y	12	5	24‡	82¾	48‡	50	88⅛	117‡	96‡	119	87	11	72	139¾
..... F-31T7	7000	10565**	S	Fk	EM	Hyd	Y	12	5	24‡	88¾	48‡	17	83⅛	145‡	96‡	147	91	13	76	143¾
..... F-39T8	8000	10000**	S	Fk	EM	Hyd	Y	12	5	24‡	94	48‡	17	83‡	140‡	116‡	152	95	9	80	154
..... F-39T10	10000	13300**	S	Fk	EM	Hyd	Y	12	5	24‡	98	48‡	17	83‡	137‡	110‡	146	98	10	83	158
..... F-25T	10000	15000**	St	Fk	EM	Ch	Y	12	3	24‡	102	48‡	67	98‡	151‡	124‡	152	129	39	92	162
..... F-5	12000	18500**	St	FR	EM	Ch	Y	10	3	30‡	111	60‡	55	.....	95‡	73‡	95	113	19	92	185
..... F-6	15000	22600**	St	FkR	EM	Ch	Y	10	3	36‡	117	72‡	57	96‡	96‡	75‡	96	118	16	100	195
..... F-6	16000	24900**	St	FkR	EM	Ch	Y	10	3	39‡	145	76‡	53	96‡	96‡	71‡	96	126	21	103	207
..... E-11	4000	3300	St	Ptf	EM	Ch	N	N	N	.....	97¼^	60‡	64	83‡	.....	64‡	.....	88	46	52	131
..... E-11-T	4000	3725	St	Ptf	EM	Ch	Y	N	N	.....	97¼^	60‡	65½	83‡	141½‡‡	124‡	.....	88	46	52	131
..... E-2	4000	3700	St	Ptf	EM	Ch	N	N	N	.....	119½^	72‡	62½	83‡	.....	62½‡‡	.....	94	38	63	147
..... E-2-T	4000	4400	St	Ptf	EM	Ch	Y	N	N	.....	119½^	72‡	63½	83‡	133½‡‡	114‡	.....	94	38	63	147
..... ELN-6	6000	4750	St	Ptf	EM	Ch	Y	N	N	.....	125½^	84‡	62	83‡	.....	62‡	.....	99	42	68	159
..... ELN-6-T	6000	5500	St	Ptf	EM	Ch	Y	N	N	.....	125½^	84‡	62½	83‡	133½‡‡	113‡	.....	99	42	68	159
..... ELN-10	10000	6000	St	Ptf	EM	Ch	Y	N	N	.....	136½^	108‡	69½	95‡	.....	69½‡‡	.....	126	66	73	183
..... ELN-10-T	10000	6200	St	Ptf	EM	Ch	Y	N	N	.....	136½^	108‡	70	95‡	142½‡‡	118‡	.....	126	66	73	183
..... ELN-16	16000	8500	St	Ptf	EM	Ch	N	N	N	.....	139½^	60‡	57	95‡	95‡	57‡	.....	128	65	78	185
..... ELN-20	20000	9900	St	Ptf	EM	Ch	N	N	N	.....	141½^	62‡	57	95‡	95‡	57‡	.....	158	82	88	206
..... ELN-30	30000	13500	St	Ptf	EM	Ch	N	N	N	.....	157^	72‡	57	107‡	107‡	57‡	107	163	83	95	225
..... ELB-50	50000	20000	St	Ptf	EM	Ch	N	N	N	.....	158⅛^	72‡	51	102‡	102‡	51*	102	168	81	102	229
..... R-20	20000	27000*	St	R	EGD	Hyd	N	N	N	42‡	150	84‡	95	136^	.....	95^	136	146	28	112	238
..... R-30	30000	38800*	St	R	EGD	Hyd	N	N	N	42‡	151	84‡	95	141^	.....	95^	141	162	33	126	254
..... R-40	40000	52800*	St	R	EGD	Hyd	N	N	N	39‡	171½	78‡	100	144^	.....	100^	144	191	34	161	278
..... R-50	50000	60760*	St	R	EGD	Hyd	N	N	N	42‡	172	84‡	94	144^	.....	94^	144	191	29	156	278
..... R-60	60000	68900*	St	R	EGD	Hyd	N	N	N	45‡	172	90‡	88	144^	.....	88^	144	191	25	159	278
..... F-48-T-3	3000	5300*	S	Fk	EGD	Hyd	Y	10	5	24‡	72½	48‡	50	83^	.....	130^	149	72	9½	65	127
..... F-26T3	3000	5300	S	Fk	EM	Hyd	Y	10	5	24‡	79	30‡	17	83‡	149‡	130‡	149	67	8	58	111⅝
..... F-26T3	3000	5100	S	Fk	EM	Hyd	Y	10	5	24‡	79	30‡	50	88‡	118‡	100‡	119	67	8	58	111⅝
..... F-38T2	2000	5050	St	Fk	EM	Hyd	Y	10	3	24‡	84	36‡	17	83‡	148‡	130‡	149	58	0	56	106
..... F-38T2	2000	4985	St	Fk	EM	Hyd	Y	10	3	24‡	84	36‡	50	88‡	118‡	100‡	119	56	0	56	106
..... F-38T3	3000	5260	St	Fk	EM	Hyd	Y	10	3	24‡	86	36‡	17	83‡	148‡	130‡	149	62	0	58	110
..... F-38T3	3000	5190	St	Fk	EM	Hyd	Y	10	3	24‡	86	36‡	50	88‡	118‡	100‡	119	62	0	58	110
..... E-12-10	10000	9000	St	Ptf	EM	Hyd	N	0	0	.....	146	.....	.....	83‡	83‡	60‡	.....	138	75	81	196
..... E-12-16	16000	12800	St	Ptf	EM	Hyd	N	.....	.....	.....	146	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Erickson F2W	Var	5120	S	Fk	GE	Hyd	Y	12	7	24‡	77	48‡	58	104‡	192‡	168‡	.....	69	6	70	128
..... F4R	Var	6200	S	Fk	GE	Hyd	Y	10	4	24‡	110	48‡	4	116‡	208‡	180‡	.....	107	18	94	174
..... F6R	Var	7800	S	Fk	GE	Hyd	Y	10	4	30‡	118	54‡	4	118‡	210‡	180‡	.....	123	38	96	184
..... F8R	Var	13400	S	Fk	GE	Hyd	Y	12	7	36‡	148	66‡	4	144‡	250‡	216‡	.....	156	48	132	215
..... F4W	Var	6200	S	Fk	GE	Hyd	Y	12	7	24	88	48‡	58	116‡	192‡	168‡	.....	69	6	70	128
..... F5R	Var	6700	S	Fk	GE	Hyd	Y	10	4	24	112	48‡	58	116‡	208‡	180‡	.....	107	18	94	174
..... F10R	Var	14500	S	Fk	GE	Hyd	Y	12	7	36	149	66‡	4	144‡	250‡	216‡	.....	156	48	132	215
..... F12R	Var	17380	S	Fk	GE	Hyd	Y	12	7	36	162	66‡	4	144‡	250‡	216‡	.....	160	50	.....	.....
..... F16R	Var	19000	S	Fk	GE	Hyd	Y	12	7	36	180	66‡	4	144‡	250‡	216‡	.....	170	58	.....	.....
Gerlinger L-12	12685	17150	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	173½‡‡	312‡	288‡	.....	180	24	148	.....
..... L-15	15000	18000	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	173½‡‡	312‡	288‡	.....	180	24	148	.....
..... L-16	16900	19350	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	174‡	312‡	288‡	.....	180	24	148	.....
..... L-18	19050	20500	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	174‡	312‡	288‡	.....	180	24	148	.....
..... L-20	20000	21500	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	174‡	312‡	288‡	.....	180	24	148	.....
..... L-22	22000	22500	S	Fk	GD	Hyd	Y	8	7	48‡	191	48^	.....	174‡	312‡	288‡	.....	180	24	148	.....
..... S-8	8000	15625	S	Fk	GD	Hyd	Y	9	6	36‡	150	42	.....	151‡	290‡	216‡	.....	140	10	120	.....
..... S-10	10000	16000	S	Fk	GD	Hyd	Y	9	6	36‡	150	42	.....	151‡	290‡	216‡	.....	140	10	120	.....
..... S-12	12000	17650	S	Fk	GD	Hyd	Y	9	6	36‡	151	48	.....	162‡	290‡	216‡	.....	141	10	120	.....
..... S-15	15000	19500	S	Fk	GD	Hyd	Y	9	6	36‡	154	48	.....	162‡	290‡	216‡	.....	144	10	124	.....
..... S-16	18000	21000	S	Fk	GD	Hyd	Y	9	6	36‡	158	48	.....	162‡	290‡	216‡	.....	148	10	124	.....
..... H-32	32000	42704	S	Fk	GE	Hyd	Opt	10	6	48‡	251	96‡	N	207‡	327‡	240‡	.....	240	48	.....	327
..... H-36	36000	44180	S	Fk	GE	Hyd	Opt	10	6	48‡	251	96‡	N	207‡	327‡	240‡	.....	240	48	.....	327
..... H-40	40000	45850	S	Fk	GE	Hyd	Opt	10	6	48‡	251	96‡	N	207‡	327‡	240‡	.....	240	48	.....	327

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt Rearward (Deg.)	MAST: Tilt Forward (Deg.)	OVERALL DIMENSIONS: Load Center (in.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast Collapsed	Height (In.): Mast Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	TURNING RADIUS (In.) With 40" x 48" Pallet: Inside	TURNING RADIUS (In.) With 40" x 48" Pallet: Intersecting Aisle Width	TURNING RADIUS (In.) With 40" x 48" Pallet: Minimum Aisle for Right Angle Stacking
Hyster ON-20	1000	3020	S	Fk	GE	Hyd	Y	11	3	24	71	48‡	2	88‡	150‡	126‡	150	67	11	59	132
ON-20	2000	3620	S	Fk	GE	Hyd	Y	11	3	15	71	48‡	2	88‡	150‡	126‡	150	67	11	59	132
ON-20	2000	3980	S	Fk	GE	Hyd	Y	11	3	24	73¼	48‡	2	88‡	150‡	126‡	150	69¼	11	62	135
UC-30	3000	5705	S	Fk	GE	Hyd	Y	10	5	24	74⅝	60‡	30	100½‡	168½‡	144‡	168⅝	75	7⅝	65	135
YC-40	4000	6305	S	Fk	GE	Hyd	Y	10	5	24	78⅝	60‡	30	100½‡	168½‡	144‡	168⅝	75	7⅝	65	135
YT-40	4000	5900	S	Fk	GE	Hyd	Y	10	4	15	86	54‡	10	101‡	168‡	144‡	168	79	10	72	148
XA-80	8000	10530	S	Fk	GE	Hyd	Y	11	5	24	106⅝	84‡	5	113½‡	193½‡	168‡	193¾	114	36½	86	183
ZA-80	8000	11680	S	Fk	GE	Hyd	Y	12	4	24	117⅝	84‡	5	115‡	195‡	168‡	193	129	43½	99	196
RT-100	10000	13600	S	Fk	GE	Hyd	Y	10	6	24	148	108‡	N	190‡	334‡	288‡	344½	180	71	131	259
RC-150	15000	19250	S	Fk	GE	Hyd	Y	10	6	24	153¾	108‡	N	192‡	336‡	288‡	336	177	48	131	250
RC-180	18000	19730	S	Fk	GE	Hyd	Y	10	6	24	157¼	108‡	N	192‡	336‡	288‡	336	177	48	131	250
SC-180	18000	20900	S	Fk	GE	Hyd	Y	10	6	24	158	108‡	N	192‡	336‡	288‡	336	179	48	132	252
HC-50	5000	7840	S	Fk	GE	Hyd	Y	10	5	24	83	60‡	8	93½‡	167‡	144‡	166	78	10	70	135
TC-200	20000	23400	S	Fk	GE	Hyd	Y	10	6	24	166½	108‡	N	202‡	346‡	288‡	348	179	48	132	252
Kwik Mix S-10	1000	1560	St	Fk	GE	Hyd	Y	0	10	21‡	68	31‡	12	78♣	96♣	72‡	96	61	6	57	.....
R-15	1500	2200	S	Fk	GE	Hyd	Y	0	2	21‡	81	33‡	N	66♣	104♣	84‡	104	75	6	64	.....
Lewis-Shepard EFFTT-1	1000	3320	St	Fk	EM	Hyd	Y	10	3	24‡	65⅝	48‡	65	91‡	165‡	142‡	165	59	66½	65	111¼
59	1500	3365	St	Fk	EM	Hyd	Y	10	3	24‡	65⅝	48‡	65	91‡	165‡	142‡	165	59	66½	65	111¼
EFFTT-2	2000	3970	St	Fk	EM	Hyd	Y	10	3	24‡	67⅝	48‡	65	89‡	161‡	138‡	161	61	66½	65	113½
61	3000	5520	St	Fk	EM	Hyd	Y	10	3	24‡	69¼	48‡	65	91‡	165‡	142‡	165	61	67½	66	114¾
EFFTT-3	3000	4936	St	Fk	EM	Hyd	Y	10	3	24‡	75½	48‡	65	91‡	165‡	142‡	165	66½	67¼	70	120
EFFTT-4	4000	5936	St	Fk	EM	Hyd	Y	10	3	24‡	75½	48‡	61½	91‡	157‡	134‡	157	66½	67¼	70	120
JFTT-1	1000	2880	S	Fk	EM	Hyd	Y	10	2	24‡	55½	48‡	11	83‡	147‡	130‡	178	49¼	52½	65	95½
JFTT-1.5	1500	3265	S	Fk	EM	Hyd	Y	10	2	24‡	55½	48‡	14	83‡	147‡	130‡	178	49¼	52½	66	95½
JFTT-2	2000	3350	S	Fk	EM	Hyd	Y	10	2	24‡	61½	48‡	14	83‡	147‡	130‡	178	55¼	52½	67	101½
E1SCTL	1000	3080	W	Fk	EM	Hyd	Y	5	N	24‡	46¾	48‡	11	83‡	148‡	130‡	178	40½	52½	61	86¾
E1.5SCTL	1500	3160	W	Fk	EM	Hyd	Y	10	2	24‡	56¾	48‡	14	83‡	147‡	130‡	178	50½	52½	69½	96¾
E2SCTL	2000	3180	W	Fk	EM	Hyd	Y	10	2	24‡	62¾	48‡	14	83‡	147‡	130‡	178	56½	52½	73½	102¾
E2.5SCHTL	2500	3210	W	Fk	EM	Hyd	Y	10	2	24‡	68¾	48‡	18	83‡	144‡	124‡	172	62½	52½	76	108¾
E3SCRTL	3000	3410	W	Fk	EM	Hyd	Y	10	2	24‡	81¼	48‡	18	83‡	145‡	125‡	173	74½	52¾	85	121¼
MN2SST	2000	2900	St	Fk	EM	Hyd	Y	.....	.....	24‡	33½	48‡	11½	83‡	145‡	127‡	145	69	50	61	89
MN3SST	3000	2900	St	Fk	EM	Hyd	Y	.....	.....	24‡	33½	48‡	11½	83‡	145‡	127‡	145	69	50	61	89
M3SOT	3000	2600	St	Fk	EM	Hyd	Y	.....	.....	32‡	31½	48‡	25	83‡	144‡	125‡	144	69	50	61	89
M3SPT	3000	2575	St	Ptf	EM	Hyd	Y	.....	.....	36‡	31½	54‡	30	83‡	144‡	129‡	144	69	50	61	89
E4SST	4000	2750	W	Fk	EM	Hyd	Y	.....	.....	32‡	29½	48‡	25	83‡	144‡	124‡	144	65	49	.....	65
E4SOT	4000	2350	W	Fk	EM	Hyd	Y	.....	.....	32‡	26½	48‡	25	71‡	120‡	101‡	120	63	49	.....	63
E4SPT	4000	2125	W	Ptf	EM	Hyd	Y	.....	.....	36‡	26½	54‡	30	83‡	144‡	129‡	144	63	49	.....	63
Lift Trucks KHL	2000	1405	W	Fk	EM	HC	Y	.....	.....	.....	36⅛	42‡	.....	83‡	141¾‡	120‡	141¾	.....	.....	64¼‡	93¾‡
KHCM-18	1000	.....	W	Fk	EM	HC	Y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
HHL	1000	.....	W	Fk	EM	Hyd	Y	.....	.....	.....	21⅛	42‡	.....	83‡	.....	120‡	.....	.....	.....	62‡	83¾‡
HHL	2000	.....	W	Fk	EM	Hyd	Y	.....	.....	.....	21⅛	42‡	.....	83‡	.....	120‡	.....	.....	.....	62‡	83¾‡
K3HL	3000	2700	W	Fk	EM	Hyd	Y	N	N	24‡	.....	42‡	4	83‡	141¾‡	120‡	141¾	.....	.....	64	92
K2HCM	2000	3300	W	Fk	EM	Hyd	Y	N	N	48‡	56	42‡	4	84‡‡	142‡	120‡	142	.....	.....	58	96
K2HW	2000	2650	W	Ptf	EM	Hyd	Y	N	N	.....	.....	.....	.....	83♣	83♣	60‡	83	.....	.....	56	87
K4HW	4000	2800	W	Ptf	EM	Hyd	Y	N	N	.....	.....	.....	.....	83♣	83♣	60‡	83	.....	.....	56	87
K2HTW	2000	2750	W	Ptf	EM	HE	Y	N	N	.....	Var	.....	.....	83‡	.....	130‡	.....	.....	.....	.....	.....
K3HTW	3000	2850	W	Ptf	EM	HE	Y	N	N	.....	Var	.....	.....	83‡	.....	127‡	.....	.....	.....	.....	.....
K4HTW	4000	2950	W	Ptf	EM	HE	Y	N	N	.....	Var	.....	.....	83‡	.....	120‡	.....	.....	.....	.....	.....
K2HTP	2000	2750	W	Fk	EM	HE	Y	N	N	.....	Var	48‡	.....	83‡	.....	129‡	.....	.....	.....	.....	.....
K3HTP	3000	2850	W	Fk	EM	HE	Y	N	N	.....	Var	48‡	.....	83‡	.....	126‡	.....	.....	.....	.....	.....
K4HTP	4000	2950	W	Fk	EM	HE	Y	N	N	.....	Var	48‡	.....	83‡	.....	121‡	.....	.....	.....	.....	.....
MacDonald D	6000	12500	S	Fk	GE	Hyd	Y	12	4	43½	143½*	.....	93‡	124‡	226‡	200‡	231‡	95‡	9	91‡	.....
Market Forge FT-55	2400	2100	S	Fk	EEG	Hyd	Opt	10	5	24‡	55½	72‡	63‡	83‡	146‡	126‡	162‡	60	4	60	60
FT-55	2400	2100	St	Fk	EEG	Hyd	Opt	10	5	24‡	55½	72‡	63‡	83‡	146‡	126‡	162‡	60	4	60	60
FT-63	2400	2100	S	Fk	EEG	Hyd	Opt	10	5	36‡	63½	72‡	63‡	83‡	146‡	126‡	162‡	60	4	60	60
FT-63	2400	2100	St	Fk	EEG	Hyd	Opt	10	5	36‡	63½	72‡	63‡	83‡	146‡	126‡	162‡	60	4	60	60
TL-26	4000	2000	Sa	Ptf	EM	Hyd	Opt	N	N	24‡	43½	48‡	63‡	83‡	146‡	126‡	146	.....	.....	.....	.....
Mercury A-2304	2000	3800	S	Fk	EM	Hyd	Y	10	3	24‡	58¼	60‡	.....	Sp	Sp	Sp	Sp	60	.....	57½	.....
A-3404	2500	4100	S	Fk	EM	Hyd	Y	10	3	24‡	62½	60‡	.....	Sp	Sp	Sp	Sp	66½	.....	59	.....
A-3444	3000	4350	S	Fk	EM	Hyd	Y	10	3	24‡	66⅝	60‡	.....	Sp	Sp	Sp	Sp	70	.....	62	.....
A-4304	4000	6100	S	Fk	EM	Hyd	Y	10	4	30‡	80⅝	60‡	.....	Sp	Sp	Sp	Sp	79	.....	70	.....
A-1484	4000	7060	St	Fk	EM	Hyd	Y	15	5	30‡	83⅝	60‡	.....	Sp	Sp	Sp	Sp	85	.....	72	.....
A-1544	6000	8700	St	Fk	EM	Hyd	Y	15	5	30‡	89¾	60‡	.....	Sp	Sp	Sp	Sp	91	.....	75	.....
A-1008	3000	2700	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	115‡	.....	.....	.....	.....	.....
A-1005	4000	2680	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	115‡	.....	.....	.....	.....	.....
A-1006	3000	2400	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	67‡	.....	.....	.....	.....	.....
A-1008	4000	2600	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	67‡	.....	.....	.....	.....	.....
A-1018	4000	3500	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	62¼‡	.....	.....	.....	.....	.....
A-1019	4000	4300	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	113‡	.....	.....	.....	.....	.....
A-1001	6000	3700	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	62¼‡	.....	.....	.....	.....	.....
A-1003	6000	4500	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	113‡	.....	.....	.....	.....	.....
A-1013	10000	5200	St	Ptf	EM	Hyd	.....	.....	.....	.....	.....	.....	.....	.....	.....	57‡	.....	.....	.....	.....	.....
A-6304	6000	7300	S	Fk	EM	Hyd	Y	10	4	24	89	60‡	.....	Sp	Sp	Sp	Sp	84	.....	73	.....
A-7304	7000	8300	S	Fk	EM	Hyd	Y	10	4	24^	89¼	60‡	Sp	Sp	Sp	Sp	Sp	84	9	75	149
A-8304	8000	9300	S	Fk	EM	Hyd	Y	10	4	24^	95¼	60‡	Sp	Sp	Sp	Sp	Sp	90	10	80	155
Mobilift E	2000	3300	St	Fk	GE	Ch	Y	11	3	15♣	64	40‡	57	102‡	172‡	147‡	.....	57	0	53	69¼
EW	2500	3600	St	Fk	GE	Ch	Y	11	3	15♣	67¾	40‡	57	102‡	172‡	147‡	.....	61	0	57	69¼
H	3000	4600	St	Fk	GE	Ch	Y	11	3	15♣	71	40‡	56	98‡	166‡	140‡	.....	61¾	0	60	75
HW	3500	4930	St	Fk	GE	Ch	Y	11	3	15♣	73¼	40‡	56	98‡	166‡	140‡	.....	63¾	0	62	75
M-324	3000	5800	S	Fk	GE	Hyd	Y	10	3	24♣	72½	48‡	64	108‡	209½‡	180‡	.....	72	.....	59	96
D-424	4000	7100	S	Fk	GE	Hyd	Y	10	3	24♣	82½	48‡	64	108‡	209½‡	180‡	.....	80	.....	69½	96
L-524	5000	7900	S	Fk	GE	Hyd	Y	10	3	24♣	83⅞	48‡	64	108‡	209½‡	180‡	.....	81	.....	70	96

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER		MAST			OVERALL DIMENSIONS								TURNING RADIUS (In.) With 40" x 48" Pallet			
								Tilt			Length (In.)	Height (In.)									
					Motive	Lifting	Telescopic	Rearward (Deg.)	Forward (Deg.)	Lead Center (In.)	Less Forks	Fork (Max.)	Free Lift	Mast Collapsed	Mast Extended	Lifting	Overall—Including Carriage or Backguard	Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Raymond E4ST	4000	3350	St	Fk	EM	Hyd	Y	N	N	24	33⅞	44‡	54⅜	83	128	126	152½	N	N	64	82
E2RT	2000	2750	St	Fk	EM	Hyd	Y	N	N	24	34⅛	44‡	40	83	118	115	162½	N	N	60	78
E3RT	3000	4200	St	Fk	EM	Hyd	Y	N	N	24	36⅛	44‡	40	83	118	116	170⅞	N	N	61	79
E4PT	4000	3400	St	Pit	EM	Hyd	Y	N	N	30	31⅞	48‡	60⅜	83	126	120	145⅞	N	N	58	74
E2P	2000	1800	St	Pit	EM	Hyd	N	N	N	24	29⅝	48‡	65	83	71	65	86	N	N	56	72
E2PT	2000	1850	St	Pit	EM	Hyd	Y	N	N	24	30⅛	48‡	52	83	127	121	149⅝	N	N	56	72
E4P	4000	1900	St	Pit	EM	Hyd	N	N	N	30	30⅛	48‡	62½	83	64	58	84½	N	N	58	74
E2F	2000	1850	St	Fk	EM	Hyd	N	N	N	24	31⅛	42‡	62½	83	67½	64	88⅛	N	N	60	71
E2FT	2000	1900	St	Fk	EM	Hyd	Y	N	N	24	31⅛	42‡	44⅜	83¼	132	128½	153⅛	N	N	60	71
E2S	2000	1800	St	Fk	EM	Hyd	N	N	N	24	31⅛	44‡	53	83	65	62	89⅛	N	N	61	70
E2ST	2200	2200	St	Fk	EM	Hyd	Y	N	N	24	31⅞	44‡	46½	83	130	127	157⅛	N	N	61	70
E3ST	3000	2300	St	Fk	EM	Hyd	Y	N	N	24	31⅞	44‡	52½	83	118	115	148	N	N	61	70
Revolator 52.22	2500	1650	W	Fk	EM	HC	Y			24	38	42‡	13	83‡	134‡	115‡				Var	Var
52.23	3000	Var	W	Fk	EM	HC	Y	10	2	24	Var	42‡	13	83‡	134‡	115‡				Var	Var
52.12	4000	1700	W	Pft	EM	HC	Y			24	36	60‡	N	83‡	134‡	115‡				Var	Var
Silent Hoist FK5		14500	S	Fk	GE	Hyd	Y	12	4	24	150	72‡		162‡	270‡	216‡		153	135		
FK7½		19000	S	Fk	GE	Hyd	Y	12	4	24	160	96‡		162‡	270‡	216‡		155	135		
FK10		20000	S	Fk	GE	Hyd	Y	12	4	24	190	120‡		174‡	282‡	216‡		188	166		
FK15		30000	S	Fk	GE	Hyd	Y	12	4	30	226	120‡		153‡	243‡	180‡		226			
Towmotor 350	1500	30954	Sa	Fk	GL	Hyd	Y	10	3-5	18^A	60¼	30^A	25½‡	83‡	137‡	122‡	140¼‡	58	5	55	109½
350	2000	34054	Sa	Fk	GL	Hyd	Y	10	3-5	15^A	60¼	30^A	25½‡	83‡	137‡	122‡	140¼‡	58	5	55	109½
350	2000	41304	Se	Fk	GL	Hyd	Y	10	3-5	24^A	61⅝	30^A	25½‡	83‡	137‡	122‡	140¼‡	60½	5	56	112
390	3000	48354	S	Fk	GL	Hyd	Y	10	3-5	15^A	71½	30^A	25½‡	101‡	161‡	146‡	164‡	68	5	61	120½
420	4000	55004	S	Fk	GL	Hyd	Y	10	3-5	15^A	74½	36^A	25½‡	101‡	161‡	146‡	164‡	71	5½	63½	123½
460	4000	62104	S	Fk	GDL	Hyd	Y	10	3-5	24^A	78½	36^A	25½‡	101‡	161‡	146‡	164‡	75	6	65	127½
400-P	2000	45104	S	Fk	GL	Hyd	Y	12	3	24^A	74	30^A	21½‡	83‡	139‡	121½‡	140‡	72	12½	60½	127½
500	5000	72354	S	Fk	GDL	Hyd	Y	10	3-5	24^A	82½	36^A	25¾‡	101‡	161‡	146¼‡	164‡	81	10¼	69	133¾
500-P	4000	68954	S	Fk	GDL	Hyd	Y	10	3-5	24^A	88⅝	36^A	25¾‡	85‡	139‡	121¾‡	140¼‡	87	18	73½	145½
LT-60	4000	74054	S	Fk	GDL	Hyd	Y	10	5	24^A	106½	42^A	13‡	87‡	140½‡	109½‡	147‡	125	50	87	185¾
LT-60	5000	80254	S	Fk	GDL	Hyd	Y	10	5	24^A	106½	42^A	13‡	87‡	140½‡	109½‡	147‡	125	50	87	185¾
LT-60	6000	89654	S	Fk	GDL	Hyd	Y	10	5	24^A	106½	42^A	13‡	87‡	140½‡	109½‡	147‡	138	62	88½	196¾
LT-50	5000	75304	S	Fk	GL	Hyd	Y	10	3-5	20^A	88	36^A	20½‡	104‡	171¾‡	146½‡	178‡	90	21	71½	145¼
LT-56	6000	84154	S	Fk	GL	Hyd	Y	10	3-5	24^A	94	42^A	20½‡	104‡	171¾‡	146½‡	178‡	96	25	75½	151¼
LT-62	7000	94204	S	Fk	GDL	Hyd	Y	10	3-5	24^A	101	42^A	20½‡	106‡	176½‡	146¾‡	178‡	104	29	80	160
LT-72	10000	120804	S	Fk	GL	Hyd	Y	10	5	24^A	111½	42^A	17½‡	86‡	136½‡	107‡	138‡	115	27	88½	171⅝
900	15000	163004	S	Fk	GL	Hyd	Y	10	3	24^A	134	42^A	22‡	95‡	147¾‡	106¼‡	148‡	145	43	104	205
Transitier 100	1000	2200	S	Fk	GE	Hyd	Y	10	4	15	70	48‡	8½	78‡	128‡	100‡	128	61		66	118
200	2000	3100	S	Fk	GE	Hyd	Y	10	4	15	70	48‡	8	78‡	128‡	100‡	128	61		66	118
250	2000	3600	S	Fk	GE	Hyd	Y	10	4	24	74	48‡	8	78‡	128‡	100‡	128	64		70	122
300	3000	4400	S	Fk	GE	Hyd	Y	10	4	15	74	48‡	10	82‡	132‡	100‡	132	64		70	122
200W	2000	3300	S	Fk	GE	Hyd	Y	10	4	15	70	48‡	8	78‡	128‡	Sp	128	61		66	118
250W	2000	3700	S	Fk	GE	Hyd	Y	10	4	24	70	48‡	8	78‡	128‡	Sp	128	64		70	122
300W	3000	4500	S	Fk	GE	Hyd	Y	10	4	15	74	48‡	10	82‡	132‡	Sp	132	64		70	122
400	4000	6500	S	Fk	GE	Hyd	Y	14	4	24	95	54‡	72‡	95‡	167‡	144‡	167‡	85	7½	75	145
500	5000	7500	S	Fk	GE	Hyd	Y	14	4	24	98	54‡	72‡	95‡	167‡	144‡	167‡	85	7½	75	145
Truck-Man W40	5000	6560	S	Fk	GE	Hyd	Y	10	3-5	30‡	76¼	36^A	45‡	90‡	150‡	120‡	150‡	72	2	73¾	142½
Y40	5000	6680	S	Fk	GE	Hyd	Y	7	3	30‡	99	36^A	45‡	90‡	150‡	120‡	150‡	116‡	34	82½	158
Yale & Towne KG51AT-J10	1000	3065	S	Fk	GL	Hyd	Y	10	3	24‡	58¼	36^A	12¾‡	68‡	121½‡	108‡	129	58	5	64	118
KG51AT-10	1000	3135	S	Fk	GL	Hyd	Y	10	3	24‡	58¼	36^A	16⅜‡	90‡	162½‡	146‡	167	58	5	64	118
KG51T-J10	1000	3065	S	Fk	GL	Hyd	Y	10	3	24‡	58¼	36^A	47	68‡	121½‡	108‡	129	58	5	64	118
KG51T-10	1000	3135	S	Fk	GL	Hyd	Y	10	3	24‡	58¼	36^A	69	90‡	162½‡	146‡	167	58	5	64	118
KG51AT-J15	1000	3700	S	Fk	GL	Hyd	Y	10	3	24‡	62	36^A	13¼	68‡	121½‡	108‡	129	60	6	64	120
KG51AT-15	1500	3770	S	Fk	GL	Hyd	Y	10	3	24‡	62	36^A	19¼	90‡	162½‡	146‡	167	60	6	64	120
KG51T-J15	1500	3700	S	Fk	GL	Hyd	Y	10	3	24‡	62	36^A	47	68‡	121¼‡	108‡	129	60	6	64	120
KG51T-15	1500	3770	S	Fk	GL	Hyd	Y	10	3	24‡	62	36^A	69	90‡	162½‡	146‡	167	60	6	64	120
KG51AT-30	3000	6550	S	Fk	GL	Hyd	Y	11½	6½	24‡	77⅝	36^A	17	90‡	161‡	144‡	178	73	6	71	137
KG51T-30	3000	6550	S	Fk	GL	Hyd	Y	11½	6½	24‡	77⅝	36^A	64	90‡	161‡	144‡	178	73	6	71	137
KG51AT-40	4000	7150	S	Fk	GLD	Hyd	Y	11½	6½	24‡	80½	36^A	17	90‡	161‡	144‡	178	75	6	72	140
KG51T-40	4000	7150	S	Fk	GLD	Hyd	Y	11½	6½	24‡	80½	36^A	64	90‡	161‡	144‡	178	75	6	72	140
KGP51AT-40	4000	7525	S	Fk	GLD	Hyd	Y	11½	5	24‡	103	36^A	17	92‡	163‡	144‡	178	75	7½	82	140
KGP51T-40	4000	7525	S	Fk	GLD	Hyd	Y	11½	5	24‡	103	36^A	64	92‡	163‡	144‡	178	75	7½	82	140
KG51AT-50	5000	7950	S	Fk	GLD	Hyd	Y	11½	6½	24‡	83¾	36^A	17	90‡	161‡	144‡	178	79	7	73	142
KG51T-50	5000	7950	S	Fk	GLD	Hyd	Y	11½	6½	24‡	83¾	36^A	64	90‡	161‡	144‡	178	79	7	73	142
KG51AT-60	6000	8750	S	Fk	GLD	Hyd	Y	11½	6½	24‡	86¾	36^A	17	90‡	161‡	144‡	178	83	8	76	147
KG51T-60	6000	8750	S	Fk	GLD	Hyd	Y	11½	6½	24‡	86¾	36^A	64	90‡	161‡	144‡	178	83	8	76	147
KGP51AT-60	6000	9300	S	Fk	GLD	Hyd	Y	11½	5	24‡	109¾	36^A	17	92‡	163‡	144‡	178	113	7½	91	182
KGP51T-60	6000	9300	S	Fk	GLD	Hyd	Y	11½	5	24‡	109¾	36^A	64	92‡	163‡	144‡	178	113	7½	91	182
KGS51AT-60	6000	9050	S	Fk	GLD	Hyd	Y	8	3	24‡	92½	36^A	17	90‡	161‡	144‡	178	89	9	78	153
KG51AT-70	7000	9600	S	Fk	GLD	Hyd	Y	11½	6½	24‡	89¼	36^A	22	90‡	155‡	132‡	178	85	8	76	150
KGS51AT-70	7000	9075	S	Fk	GLD	Hyd	Y	8	3	24‡	99¼	36^A	22	90‡	155‡	132‡	178	98	12	84	164
KGP51AT-70	7000	10003	S	Fk	GLD	Hyd	Y	11½	5	24‡	113	36^A	22	92‡	157‡	132‡	166	116	7½	82	185
KG51AT-80	8000	10200	S	Fk	GLD	Hyd	Y	11½	6½	24‡	94¾	36^A	22	90‡	155‡	132‡	178	91	9	80	155
KGP51AT-80	8000	11000	S	Fk	GLD	Hyd	Y	11½	5	24‡	113	36^A	22	92‡	157‡	132‡	166	116	7½	84	185
KG51AT-100	10000	13300	S	Fk	GLD	Hyd	Y	11	5	24‡	105½	42^A	26	90‡	150½‡	124‡	161¼	103	12	86	169
K51AT-J10	1000	2010	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	11	68‡	121½‡	108‡	129	58		64	117
K51AT-10	1000	2080	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	17	90‡	162½‡	146‡	167	58		64	117
K51T-J10	1000	2080	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	47	68‡	121½‡	108‡	129	58		64	117
K51T-10	1000	2140	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	69	90‡	162½‡	146‡	167	58		64	117
K51AT-J15	1500	2350	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	11	68‡	121½‡	108‡	129	58		64	118
K51AT-15	1500	2120	S	Fk	EM	Hyd	Y	10	3	24‡	62⅝	36^A	17	90‡	162½‡	146‡	167	62		65	122
K51T-J15	1500	2400	S	Fk	EM	Hyd	Y	10	3	24‡	57⅝	36^A	47	68‡	121½‡	108‡	129	58		64	118
K51T-15	1500	2180	S	Fk	EM	Hyd	Y	10	3	24‡	62⅝	36^A	69	90‡	162½‡	146‡	167	62		65	122
K51AT-J20	2000	2990	S	Fk	EM	Hyd	Y	10	3	24‡	59½	36^A	11	68‡	121½‡	108‡	129	58		64	118
K51AT-20	2000	2480	S	Fk	EM	Hyd	Y	10	3	24‡	62½	36^A	17	90‡	162½‡	146‡	167	62		65	122

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt Rearward (Deg.)	MAST: Tilt Forward (Deg.)	OVERALL DIMENSIONS: Load Center (In.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast Collapsed	Height (In.): Mast Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Yale & Towne—Cont'd.																					
K51T-J20	2000	3040	S	Fk	EM	Hyd	Y	10	3	24‡	59½	38▲	47	68‡	121½‡	108‡	129	59	.....	64	119
K51T-20	2000	2510	S	Fk	EM	Hyd	Y	10	3	24‡	62⅝	38▲	69	90‡	162½‡	146‡	167	62	.....	65	122
K51AT-30X	3000	3850	S	Fk	EM	Hyd	Y	10	3	24‡	70⅝	38▲	21	90‡	161‡	144‡	165	70	.....	68	131
K51AT-30	3000	4680	S	Fk	EM	Hyd	Y	10	3	24‡	73¼	38▲	17	90‡	161‡	144‡	178	75	.....	72	139
K51T-30X	3000	3730	S	Fk	EM	Hyd	Y	10	3	24‡	70⅝	38▲	69	90‡	161‡	144‡	165	70	.....	68	131
K51T-30	3000	4680	S	Fk	EM	Hyd	Y	11½	6½	24‡	73¼	38▲	64	90‡	161‡	144‡	178	75	.....	72	139
K51AT-4015X	4000	3960	S	Fk	EM	Hyd	Y	10	3	15‡	70⅝	38▲	21	90‡	161‡	144‡	165	70	.....	68	131
K51AT-4015	4000	4870	S	Fk	EM	Hyd	Y	11½	3½	15‡	73¼	38▲	17	90‡	161‡	144‡	178	75	.....	72	139
K51T-4015X	4000	3960	S	Fk	EM	Hyd	Y	10	3	15‡	70⅝	38▲	69	90‡	161‡	144‡	165	70	.....	68	131
K51T-4015	4000	4870	S	Fk	EM	Hyd	Y	11½	6½	15‡	73¼	38▲	64	90‡	161‡	144‡	178	75	.....	72	139
K51AT-40	4000	5490	S	Fk	EM	Hyd	Y	11½	6½	24‡	74½	38▲	17	90‡	161‡	144‡	178	75	.....	72	139
K51T-40	4000	5490	S	Fk	EM	Hyd	Y	11½	6½	24‡	74½	38▲	64	90‡	161‡	144‡	178	75	.....	72	139
K51AT-50	5000	5750	S	Fk	EM	Hyd	Y	11½	6½	24‡	81	38▲	17	90‡	161‡	144‡	178	82	.....	75	146
K51T-50	5000	5750	S	Fk	EM	Hyd	Y	11½	6½	24‡	81	38▲	64	90‡	161‡	144‡	178	82	.....	75	146
K51AT-60	6000	6250	S	Fk	EM	Hyd	Y	11½	6½	24‡	81	38▲	17	90‡	161‡	144‡	178	84	.....	78	148
K51AT-70	7000	6860	S	Fk	EM	Hyd	Y	11½	6½	24‡	85	38▲	22	90‡	156‡	132‡	166	86	.....	77	150
K51AT-90	8000	6970	S	Fk	EM	Hyd	Y	11½	6½	24‡	90¾	38▲	22	90‡	156‡	132‡	166	91	.....	81	156
K51AT-100	10000	10660	S	Fk	EM	Hyd	Y	11	5	24‡	95	42▲	30	90‡	150⅞‡	124‡	161¼	91	.....	84	157
K33GH-50	50000	.....	St	Ptf	EM	Ch	N	N	N				52	112▲	112▲	75▲	112▲	151	.....	122	189
K41-4	4000	.....	St	Fk	EM	Ch	Y	10	5	24‡	76½	38▲	63	83‡	.....	119‡	153	73	23	72	136
K41-5	5000	.....	St	Fk	EM	Ch	Y	8	2	24‡	81¼	38▲	63	83‡	.....	119‡	153	84	27	75	147
K41-6	6000	.....	St	Fk	EM	Ch	Y	8	2	24‡	82	38▲	62	83‡	.....	118‡	152	85	28	77	148
K41-7	7000	.....	St	Fk	EM	Ch	Y	8	2	24‡	86⅝	38▲	62	83‡	.....	118‡	152	87	28	80	153
K41-8	8000	.....	St	Fk	EM	Ch	Y	8	3	24‡	90⅝	42▲	58	83▲	.....	107▲	141	94	32	82	156
K41-10	10000	.....	St	Fk	EM	Ch	Y	8	2	30‡	105¼	38▲	65	96▲	.....	110▲	146	104	33	93	174
K41-12	12000	.....	St	Fk	EM	Ch	Y	8	2	24‡	105¼	38▲	65	96▲	.....	110▲	146	104	33	93	174
K41-12	12000	.....	St	Fk	EM	Ch	N	5	2	30‡	113¼	48▲	58	96▲	.....	58▲	96	108	32	97	175
K41-14	14000	.....	St	Fk	EM	Ch	N	5	2	36‡	113¼	48▲	58	96▲	.....	58▲	96	108	32	97	173
K41-15	15000	.....	St	Fk	EM	Ch	N	5	2	36‡	113¼	48▲	58	96▲	.....	58▲	96	108	3	97	175
K41-16	16000	.....	St	Fk	EM	Ch	N	5	2	39‡	123	48▲	54	96▲	.....	54▲	96	119	4	104	185
K41-18	18000	.....	St	Fk	EM	Ch	N	5	2	39‡	123	48▲	54	96▲	.....	54▲	96	119	4	104	185
K51-200	20000	.....	St	Fk	EM	Hyd	N			48‡	151½	.....	76	148▲	.....	78▲	150	154	3	135	225
K51-250	25000	.....	St	Fk	EM	Hyd	N			48‡	151½	.....	76	148▲	.....	78▲	150	154	3	135	225
K51-300	30000	.....	St	Fk	EM	Hyd	N	N	N	48‡	152	.....	76	148▲	.....	78▲	150	154	3	135	225
K51-400	40000	.....	St	Fk	EM	Hyd	N	N	N	48‡	157	.....	72	148▲	.....	72▲	150	156	3	138	226
K51-500	50000	.....	St	Fk	EM	Hyd	N	N	N	48‡	169	.....	61	148▲	.....	61▲	150	184	3	167	255
K51-600	60000	.....	St	Fk	EM	Hyd	N	N	N	48‡	173	.....	61	148▲	.....	61▲	150	185	3	168	258
K51-800	80000	.....	St	Fk	EM	Hyd	N	N	N	30‡	173	.....	61	148▲	.....	61▲	150	185	3	168	258
KM4H	4000	2510	St	Ptf	EM	Ch	Y	N	N				61	83‡	139‡	115‡	139	67	39	63	133
K22-4	4000	3800	St	Ptf	EM	Ch	Y	N	N				51	83‡	68▲	113‡	.....	99	43	66	153
K25-6	6000	4735	St	Ptf	EM	Ch	Y	N	N				62	83▲	.....	113▲	.....	105	46	71	157
K25H-6	6000	4850	St	Ptf	EM	Ch	Y	N	N				67	83▲	.....	118▲	.....	102	45	67	154
K33-10	10000	6380	St	Ptf	EM	Ch	Y						57	.....	.....	.....	.....	124½	64½	76	182
K33H-12	12000	7600	St	Ptf	EM	Ch	N	N	N				63	83▲	.....	63▲	84	125½	66	76	183
K33SH-16	16000	8100	St	Ptf	EM	Ch	N	N	N				58	83▲	.....	58▲	84	126	64	76	184
K33GH-20	20000	.....	St	Ptf	EM	Ch	N	N	N				72	.....	.....	.....	.....	164	90	95	245
K33GH-30	30000	.....	St	Ptf	EM	Ch	N	N	N				75	.....	.....	.....	.....	137	.....	105	165
K33GH-40	40000	.....	St	Ptf	EM	Ch	N	N	N				75	.....	.....	.....	.....	137	.....	113	167
M10HF	1000	1755	W	Fk	EM	Hyd	N	N	N	8‡	44½	24▲	54½	83‡	.....	60‡	89	41	.....	61	96
M15HF	1500	2081	W	Fk	EM	Hyd	N	N	N	10‡	48¼	24▲	54½	83‡	.....	60‡	89	45	.....	61	100
M15HTF	1500	2780	W	Fk	EM	Hyd	N	10	2	24‡	57⅞	30▲	54	83‡	.....	60‡	89	54	.....	63	109
M15TTF	1500	3155	W	Fk	EM	Hyd	Y	10	2	24‡	57⅞	30▲	60¾	83‡	142½‡	120‡	149	54	.....	63	109
M20HTF	2000	2805	W	Fk	EM	Hyd	N	10	2	24‡	63⅝	30▲	54	83‡	83‡	60‡	89	60½	.....	65	116
M20TTF	2000	3180	W	Fk	EM	Hyd	Y	10	2	24‡	63⅝	30▲	60¾	83‡	142½‡	120‡	149	60½	.....	65	116
M25HTF	2500	3105	W	Fk	EM	Hyd	N	10	2	24‡	67⅝	30▲	54	83‡	83‡	60‡	89	64	.....	66½	119
M25TTF	2500	3480	W	Fk	EM	Hyd	Y	10	2	24‡	67⅝	30▲	60¾	83‡	142½‡	120‡	149	64	.....	66½	119
M30HTF	3000	3430	W	Fk	EM	Hyd	N	10	2	24‡	77	30▲	54	83‡	83‡	58½‡	87¼	72	.....	70	128
M30TTF	3000	3805	W	Fk	EM	Hyd	Y	10	2	24‡	77	30▲	57½	83‡	138¾‡	113¼‡	142¼	72	.....	70	128
M30SF	3000	.....	W	Fk	EM	Hyd	N	N	N	24‡	34⅛	36▲	54	83‡	.....	64‡	90	67½	.....	67½	87
M30STF	3000	.....	W	Fk	EM	Hyd	Y	N	N	24‡	34⅛	36▲	19	83‡	143‡	123½‡	152½	67½	.....	67½	87
M40SF	4000	.....	W	Fk	EM	Hyd	N	N	N	24‡	38	42▲	54	83‡	.....	63½‡	90	78½	.....	75	92½
M40STF	4000	.....	W	Fk	EM	Hyd	Y	N	N	24‡	38	42▲	61	83‡	143‡	123‡	150	78½	.....	75	92½
M4HL7	4000	1780	W	Ptf	EM	Hyd	N	N	N	30‡	.....	.....	.....	83‡	.....	66½‡	83	.....	.....	.....	.....
M4HL11	4000	1780	W	Ptf	EM	Hyd	N	N	N	30‡	.....	.....	.....	83‡	.....	70½‡	83	.....	.....	.....	.....
M25HLP	2500	1320	W	Fk	EM	Hyd	N	N	N	21‡	39	48‡	66	83‡	.....	66‡	83	.....	.....	.....	.....
M30HLT	3000	2875	W	Ptf	EM	Hyd	Y	N	N	30‡	.....	.....	27	83‡	.....	123‡	142	.....	.....	.....	.....
M40HLT	4000	3025	W	Ptf	EM	Hyd	Y	N	N	30‡	.....	.....	27	83‡	.....	123‡	142	.....	.....	.....	.....
RSA-2	2000	2400	St	Fk	EM	Hyd	N	N	N	24‡	29⅛	.....	.....	90‡	.....	76½‡	.....	.....	.....	63	74
RSAT-2	2000	2600	St	Fk	EM	Hyd	Y	N	N	24‡	29⅛	.....	21	90‡	170½‡	147‡	176	.....	.....	63	74
RST-2	2000	2670	St	Fk	EM	Hyd	Y	N	N	24‡	29⅛	.....	53	90‡	170½‡	147‡	176	.....	.....	63	74
RSA-3	3000	2450	St	Fk	EM	Hyd	N	N	N	24‡	29⅛	.....	.....	90‡	.....	76½‡	.....	.....	.....	63	74
RSAT-3	3000	2650	St	Fk	EM	Hyd	Y	N	N	24‡	29⅛	.....	.....	90‡	170½‡	147‡	176	.....	.....	63	74
RST-3	3000	2720	St	Fk	EM	Hyd	Y	N	N	24‡	29⅛	.....	53	90‡	170½‡	147‡	176	.....	.....	63	74
GS2-2024	2000	4125	S	Fk	GL	Hyd	Y	10	5	24‡	70½	30▲	21	90‡	165‡	144‡	165	67	.....	57	109
GS2T-2024	2000	4125	S	Fk	GL	Hyd	Y	10	5	24‡	70½	30▲	62	90‡	165‡	144‡	165	67	.....	57	109
GS2-3024	3000	4735	S	Fk	GL	Hyd	Y	10	5	24‡	73½	30▲	21	90‡	165‡	144‡	165	69¾	.....	58½	112
GS2T-3024	3000	4735	S	Fk	GL	Hyd	Y	10	5	24‡	73½	30▲	62	90‡	165‡	144‡	165	69¾	.....	58½	112
GS2-4015	4000	4735	S	Fk	GL	Hyd	Y	10	5	15‡	73½	30▲	21	90‡	165‡	144‡	165	69¾	.....	58½	112
GS2T-4015	4000	4735	S	Fk	GL	Hyd	Y	10	5	15‡	73½	30▲	62	90‡	165‡	144‡	165	69¾	.....	58½	112
GP52-2024	2000	4425	S	Fk	GL	Hyd	Y	10	5	24‡	72⅝	30▲	21	90‡	160½‡	140‡	160½	75	.....	60	120
GP52V-2024	2000	4425	S	Fk	GL	Hyd	Y	10	5	24‡	72⅝	30▲	48	90‡	160½‡	140‡	160½	75	.....	60	120
K53AT-2024	2000	3000	S	Fk	EM	Hyd	Y	10	5	24‡	71⅝	3 ▲	21	83‡	151‡	130‡	151	71	.....	61	119
K53T-2024	2000	3000	S	Fk	EM	Hyd	Y	10	5	24‡	71⅝	36▲	62	83‡	151‡	130‡	151	71	.....	61	119
K46T-2024	2000	3400	St	Fk	EM	Hyd	Y	10	5	24‡	65½	35▲	62	83‡	150½‡	130‡	150½	64	.....	58	112
K46AT-3024	3000	3550	St	Fk	EM	Hyd	Y	10	5	24‡	67¼	35▲	21	83‡	150½‡	130‡	150½	64	.....	.....	.....
K46T-3024	3000	3550	St	Fk	EM	Hyd	Y	10	5	24‡	67¼	35▲	62	83‡	150½‡	130‡	150½	64	.....	.....	.....
K46AT-4015	4000	3550	St	Fk	EM	Hyd	Y	10	5	24‡	67¼	36▲	21	83‡	150½‡	130‡	150½	64	.....	.....	.....
K46T-4015	4000	3550	St	Fk	EM	Hyd	Y	10	5	24‡	67¼	36▲	62	83‡	150½‡	130‡	150½	64	.....	.....	.....
K53AT-3024	3000	3150	S	Fk	EM	Hyd	Y	10	5	24‡	73¼	36▲	21	83‡	151‡	130‡	151	71	.....	62	120

For abbreviations and references see page 341

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED HIGH-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.) Excluding Battery	Operator—Sits, Stands, Walks	Lift—Fork or Platform	POWER: Motive	POWER: Lifting	MAST: Telescopic	MAST: Tilt Rearward (Deg.)	MAST: Tilt Forward (Deg.)	OVERALL DIMENSIONS: Load Center (In.)	Length (In.): Less Forks	Length (In.): Fork (Max.)	Height (In.): Free Lift	Height (In.): Mast Collapsed	Height (In.): Mast Extended	Height (In.): Lifting	Height (In.): Overall—Including Carriage or Backguard	TURNING RADIUS (In.) With 40" x 48" Pallet: Outside (Tailswing)	Inside	Intersecting Aisle Width	Minimum Aisle for Right Angle Stacking
Yale & Towne—Cont'd																					
K53T-3024	3000	3150	S	Fk	EM	Hyd	Y	10	5	24‡	73¼	36▲	62	83‡	151‡	130‡	151	71	.....	62	120
K53AT-4015	4000	3150	S	Fk	EM	Hyd	Y	10	5	15‡	73¼	35▲	21	83‡	151‡	130‡	151	71	.....	62	120
K53T-4015	4000	3150	S	Fk	EM	Hyd	Y	10	5	15‡	73¼	36▲	62	83‡	151‡	130‡	151	71	.....	62	120
K46AT-4024	2000	3400	St	Fk	EM	Hyd	Y	10	5	24‡	65½	36▲	21	83‡	150½‡‡	130‡	150½	64	.....	58	112
M10ATF	1000	.....	W	Fk	EEG	Hyd	Y	7	2	24‡	47	30▲	18	90‡	168‡	144‡	168	44	.....	.....	.....
M15ATF	1500	3155	W	Fk	EEG	Hyd	Y	10	2	24‡	57¾	30▲	18	90‡	168‡	144‡	168	54	.....	54	92½
M20ATF	2000	3180	W	Fk	EEG	Hyd	Y	18	2	24‡	63¾	30▲	18	90‡	168‡	144‡	168	60½	.....	57	99
M25ATF	2500	3480	W	Fk	EEG	Hyd	Y	18	2	24‡	68¾	30▲	18	90‡	168‡	144‡	168	64	.....	59	102½
M30ATF	3000	3805	W	Fk	EEG	Hyd	Y	18	2	24‡	76	30▲	18	90‡	168‡	144‡	168	72	.....	63	112
M30HLTP	3000	2590	W	Fk	EEG	Hyd	Y	.....	.....	21‡	45¼	42▲	22	83‡	142‡	120‡	142	77	.....	67	83
M40HLTP	4000	2740	W	Fk	EEG	Hyd	Y	.....	.....	21‡	45¼	42▲	22	83‡	142‡	120‡	142	77	.....	67	83
KM31A-4	4000	5500	St	Fk	EEG	Hyd	Y	10	3	24‡	95	36▲	55	83‡	153‡	119‡	153	104	.....	74	138
KM31A-6	6000	.....	St	Fk	EEG	Hyd	Y	10	3	24‡	95	36▲	33	83‡	153‡	119‡	153	.....	.....	.....	.....
RSEAT-2	2000	.....	St	Fk	EM	Hyd	Y	.....	4	24▲	29¾	36▲	.....	83▲	178▲	126▲	.....	.....	.....	64	87
RSFFAT-2	2000	.....	St	Fk	EM	Hyd	Y	.....	.....	24▲	27¾	30▲	.....	83▲	.....	126▲	.....	.....	.....	64	82
RSEFAT-3	3000	.....	St	Fk	EM	Hyd	Y	4	0	24▲	54½	48‡	19¼	83▲	.....	126½▲	.....	.....	.....	64	82

ABBREVIATIONS

*—Including battery.
†—Without load.
▲—Standard.
■—Including forks or platform.
●—With 36" x 36" load.
‡—Maximum.
♦—Minimum.

‡—With 48" load.
**—Includes battery and counterweight.
††—With 60" load.
Ch—Chain.
DE—Diesel engine.
EEG—Electric motor or electric motor and gasoline engine.
EGD—Electric motor, gasoline engine or diesel engine.
EM—Electric motor.
Fk—Fork
FkR—Fork or ram.
FR—Fork ram.
GD—Gasoline or diesel engine.
GDL—Gasoline, diesel or L.P.G. engine.
GE—Gasoline engine.
GL—Gasoline or L.P.G. engine.
HC—Hydraulic and chain.
HE—Hydraulic electric.
Hyd—Hydraulic.
N—No or none.
Opt—Optional.
Ptf—Platform.
R—Ram.
S—Sits.
SP—Built to specifications.
Ss—Sits or stands.
St—Stands.
Var—Variable.
W—Walks.
Y—Yes.

POWERED NON-LIFT PLATFORM TRUCKS

Due to space limitations basic models only are presented for each of the companies represented. Variations, to fit the needs of the individual user are available from any of the manufacturers listed.

MAKE AND MODEL	Rated Capacity (Lbs.)	Service Weight (Lbs.)	OPERATOR: Rides or Walks	OPERATOR: Sits or Stands	Motive Power	Frame Type	Controls & Steering	OVERALL TRUCK DIMENSIONS (Ins.): Width	Length	Height	Wheelbase	PLATFORM DIMENSIONS (Ins.): Length	Width	Height from Ground	No. of Drive Wheels	No. of Steering Wheels	TURNING RADIUS (Ins.): Inside	Outside	Intersecting Aisle Width	Dead Man Brake
Automatic FP-20	2000	1935	R	S	EM	Str	1	40	109	.....	60	60½	40	14¾	2	1	24	90	68	Y
HN-2	4000	3730	R	St	EM	Str	1	39	114½	.....	65	64	38	12¾	2	4	50	102	64	Y
HN-3	6000	4700	R	St	EM	Str	1	41	118½	.....	65	64	41	12¾	2	4	46	103	69	Y
EN-2	4000	4000	R	St	EM	Str	1	46	105¾	.....	55	84	46	24	2	4	41	98	69	Y
EN-3	6000	4255	R	St	EM	Str	1	45	107	.....	53	84	45	22¾	2	4	41	100	68	Y
Baker PG-040-01	2000	2600	R	S	GE	Str	1	60	160	.....	100	108	60	26	2	2	.....	255	133	.....
Crescent PDB-4	4000	4800	R	St	EM	Dr	1	42	118½	52¾	67	60	42	12	2	4	100	.....	68	Y
RDB-6	6000	5600	R	St	EM	Dr	1	42	118½	52¾	67	60	42	12	2	4	100	.....	68	Y
RSE-10	10000	3900	R	St	EM	Str	1	42	112½	53⅜	66½	90	42	26	2	4	101	.....	67	Y
Elwell-Parker FH-6	6000	2900	R	St	E-G	Str	1	42⅜	124½	58	60	64	41	12½	2	4	45	105	70	Y
WH-6	6000	2975	R	St	E-G	Str	1	42⅞	146½	58	78	86	41	17¼	2	4	61	123	78	Y
IE	6000	2475	R	St	E-G	Str	1	40	111¾	58¼	60	84	40	25	2	4	48	101	69	Y
SE	4000	2650	R	St	E-G	Str	2	45	150	84	83½	138¾	44	34	2	4	71	138	89	Y
Hyster Cargo Truck	4000	1510	R	St	GE	Str	1	42	103½	58	73½	60	42	7½	1	2	0	89	72	N
Kalamazoo 2500	2000	1150	R	.....	GE	Str	1	42	96	48	59¼	54	42	18½	2	1	64	81	.....	Y
Kwik Mix S10	1500	880	R	St	GE	Str	1	34	80	49½	34¾	48	34	20	2	2	6	61	53	Y
R15	2000	1100	R	S	GE	Str	1	36	94	48	43½	54	34	22	2	2	6	73	60	N
Market Forge Freight Truck	6000	950†	R	Sst	E-G	Str	1	36	92¼	45	55½	57	36	13⅝	1	1	3	74	48	Y
Mercury A-823	2000	1250†	R	S	EM	Str	1	40	111¼	51½	63	(5)	40	22	2	1	.....	82	.....	Y
A-1014	4000	2700†	R	St	EM	Str	1	46	112	56	61	89	46	27½	2	2	.....	97	69	Y
A-1014	6000	2830†	R	St	EM	Str	1	46	112	56	61	89	46	27½	2	2	.....	97	69	Y
A-1015	4000	2600†	R	St	EM	Dr	1	41	120‡‡	56	71	72	41	11½	2	2	.....	108	69	Y
A-1015	6000	2700†	R	St	EM	Dr	1	41	120‡‡	56	71	72	41	11½	2	2	.....	108	69	Y
A-1009	3000	2500†	R	St	EM	Str	1	33	82⅝	46½	40½	62	33	24	2	2	29	75	55	Y
Yale & Towne K20-6	6000	2535	R	St	E-G	Str	1	42	108⅝	51	61	86¾	42	25½	2	4	47	104	67	Y
FM20	2000	1225	R	S	E-G	Str	1	40	96	.....	62	96	42	22	2	1	.....	83	66	Y
K32	4000	3300	R	St	E-G	Str	2	45	176	84	126½	148	45	(6)	2	4	102	168	94	Y
K36	4000	3300	R	St	E-G	Dr	2	45	176	84	126½	148	45	34	2	4	102	168	94	Y

ABBREVIATIONS

*—Maximum.
†—Without battery.

(5)—61½ to 88.
(6)—11 and 34.
Dr—Drop.
E-G—Electric or gas-electric.
EM—Electric motor.
GE—Gasoline engine.
N—No or none.
R—Rides.
S—Sits.
Sst—Sits or stands.
St—Stands.
Str—Straight.
Y—Yes.

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED LOW-LIFT FORK OR PLATFORM TRUCKS

Due to space limitations basic models only are presented for each of the companies represented. Variations, to fit the needs of the individual user, are available from any of the manufacturers listed.

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.)—Excluding Battery	Operator—Walks or Rides	POWER		OVERALL CHASSIS DIMENSIONS (Ins.)				PLATFORM DIMENSIONS (Ins.)						FORK DIMENSIONS (Ins.)						
										Length		Width		Height Above Ground		Length			Lateral Outside Overall Width		Height Above Ground	
				Motive	Lifting	Length, Excluding Platform or Forks	Width	Height—To Top of Controls	Lowest Underclearance	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Width of Face	Minimum	Maximum	Lowered	Elevated
Allis-Chalmers																						
CB-20	2000	1300	R	GE		97†	40†	50	3					16½								
Automatic																						
LO-2	4000	3125	R	EM	Hyd	113	39			55^A		26^A		10¼	16¼							
LO-3	6000	3425	R	EM	Hyd	113	41			55^A		27^A		10⅝	16⅝							
LO-5	10000	4500	R	EM	Mec	126½†	41†			60^A		28^A		11	16							
PE-427	4000		W	EM	Hyd	30⅞	30	50	1⅝							29½	59½	9^A	27^A		3⅝	8⅝
PE-627	6000		W	EM	Hyd	30⅞	30	50	1⅝							29½	59½	9^A	27^A		3⅝	7⅝
TNE-4	4000		W	EM	Hyd	31⅝	30	50	2⅝	36	72	20^A		(1)	(2)							
TWE-4	4000		W	EM	Hyd	31⅝	30	50	2⅝	36	72	26½^A		(1)	(2)							
TNE-6	6000		W	EM	Hyd	31⅝	30	50	2⅝	36	72	20^A		(1)	(2)							
TWE-6	6000		W	EM	Hyd	31⅝	30	50	2⅝	36	72	26½		(1)	(2)							
TWH-4	4000		W	EM	Hyd	33¾	30	50	2½	30	60	27		6½	21							
TWH-6	6000		W	EM	Hyd	33¾	30	50	2½	30	60	27		6½	21							
ETWE-4	4000		R	EM	Hyd	29⅝	32		2½	36	72	26½		(1)	(2)							
EPE-4	4000		R	EM	Hyd	29½	32		1¼							30	60	9^A	27^A		3½	7¼
Baker																						
E-3	6000	3500	R	E-G	Hyd	70⅝	42¾	56½	4	55	84	26½	48	10⅝	16¼							
E-5	10000	4800	R	E-G	Hyd	71⅝	42¾	56½	4	60	96	26½	48	10⅝	16¼							
Barrett																						
PO-40	4000	1625	W	EM	Hyd	38⅛	36	59⅛	1⅝	36	60	24¾		6½								
PO	4000	1132	W	EM	Hyd	32⅝	27¼	59⅛	3⅝	36	72	20		(1)	(3)							
POK	4000	1176	W	EM	Hyd	32⅝	27¼	59⅛	3⅝	36	72		25	(1)	(3)							
PX	4000	1145	W	EM	Hyd	33	27¼	59⅛	⅞							30	66	9	27		3¼	7¼
STF-40	4000	1635	W	EM	Hyd	38⅛	52½	59⅛	1½							24	48	4	6	32	2	68
Clark																						
40LP	4000	940^	W	E-G	Hyd	26⅞	32	52	2⅛	36	72	18	26	6	10¾							
60LP	6000	970^	W	E-G	Hyd	26⅞	32	52	2⅛	36	72	18	26	6	10¾							
40P	4000	1040^	W	E-G	Hyd	28⅝	32	52	2⅝							30	72	9¼	27^A		3¼	7¼
60P	6000	1070^	W	E-G	Hyd	28⅝	32	52	2⅝							30	72	9¼	27^A		3¼	7¼
Colson																						
S-4	4000	1075	R	GE	Hyd	30	29		3¾	30	72	24^A		(17)	(18)							
DFP-4	4000	1175	R	GE	Hyd	30	29									32	60	9¼‡		27	3¼	7¼
Crescent																						
PLA-4	4000		R	E-G	Hyd	110	38		4	48		24		7	20							
PLB-4	4000		R	E-G	Hyd	115	38		4	48		24		7	20							
RLB-10	10000		R	E-G	Hyd	130	42		4½	60		27		11	24							
Elwell-Parker																						
EQ-4	4000	2100	R	EM	Mec	95¾†	31¼†	54¾	3	41	66	24	26½	10½	15							
EQ-4	4000	2100	R	EM	Mec	87¼†	31¼†	54¾	2⅝	41	60	18½	26½	7	10¼							
EP-4-11	4000	3150	R	EM	Mec	119⅞†	43†	56⅝	4	54	120	26½	36	10¾	16½							
EP-6	6000	3200	R	EM	Mec	119⅞†	42¾†	58	4	54	120	26½	36	10¾	16½							
GEP-6	6000	3900	R	GE	Hyd	125†	42¾†	58	4	54	120	26½	36	10¾	16½							
EW-6	6000	3450	R	EM	Mec	120½†	42¾†	58	10¼	54	106	26½	36	16½	22½							
EP-10	10000	3600	R	EM	Mec	129†	43†	59½	3¾	60	120	26½	40	11	16¾							
GEP-10	10000	4200	R	GE	Hyd	132†	42¾†	58	3⅞	60	120	26½	40	11	16¾							
EY-ZO	20000		R	EM	Hyd	146⅝†	45†	58	5	75		41		17½	23½							
L-13	20000		R	EM	Hyd	155¼†	48†	58	2½	72		26½		11¼	17¼							
L-12	20000		R	EM	Hyd	166½	50	58	2	96		36		11½	17							
L-3	30000		R	EM	Hyd	138½	56½	60	8	60		50		18	24							
L-14	40000		R	EM	Hyd	187	56½	60	6	96		41		17½	23½							
Ericksen																						
P-5	5000	2700	R	GE	Hyd	75	40	56	7	60	Var	Var	Var	11	21							
P-7	7000	3000	R	GE	Hyd	75	40	56	7	60	Var	Var	Var	11	21							
P-7A	7000	3000	R	GE	Hyd	84	40	56	7	60	Var	Var	Var	12	21							
P-10A	10000	3500	R	GE	Hyd	84	40	56	7	60	Var	Var	Var	12	21							
Kalamazoo																						
301	800	1000	R	GE	Hyd	63¼	33½	45	4							18	25	34	6	32	¾	18
Lewis-Shepard																						
MN4P	4000	1400	R	EM	Hyd	32¼	32	54	1							36	60	9¼4	25	38	3¼	7¼
MN4N	4000	1200	R	EM	Hyd	25⅝	32	54	2	36	72	18		(1)	(6)							
MN4W	4000	1200	R	EM	Hyd	25⅝	32	54	3	30	72		36	(1)	(6)							
SE4P	4000	1000	W	EM	Hyd	25⅞	32	53	1							32	72	9¼4	25	38	3¼	7¼
SE8P	6000	1150	W	EM	Hyd	25⅞	32	53	1							32	72	9¼4	25	38	3¼	7¼
E4TP	4000	1000	W	EM	Hyd	33	32	54	1							24	42	64	16		3¼	7¼
E4N	4000	(7)	W	EM	Hyd	25⅝	32	54	2	36	72	18		(1)	(6)							
E4W	4000	(7)	W	EM	Hyd	25⅝	32	54	3	30	72		36	(1)	(6)							
E6N	6000	(7)	W	EM	Hyd	25⅝	32	54	2	36	72	18		(1)	(6)							
E6W	6000	(7)	W	EM	Hyd	25⅝	32	54	3	30	72		36	(1)	(6)							
Lift Trucks																						
KNS	6000	1300	W	EM	Hyd	31¼	32¼	50⅝		36	72	18	26	(1)	(2)							
KMS	6000	1400	W	EM	Hyd	31¼	32¼	50⅝		36	72	21	25	(1)	(2)							
KWS	6000	1600	W	EM	Hyd	31¼	32¼	50⅝		36	72	26¼		(1)	(2)							
KPNS	4000	1200	W	EM	Hyd	33⅝	32¼	50⅝	¾							30	60	8¼4	22	26	3¼	7¼
KPWS	4000	1300	W	EM	Hyd	33⅝	32¼	50⅝	¾							30	60	104	27		3¼	7¼
Market Forge Skid Lift Truck	6000	(8)	W	E-G	Hyd	43	(9)	45	(10)	30	72	18	26	(1)	(6)							
Pallet Lift Truck	6000	(11)	W	E-G	Hyd	43	28	45	1¼							30	72	11^	27	27	(12)	7¼
Mercury																						
A-1007	3000	2100	R	EM	Hyd	86	33¾		2⅛			18		7	20							
A-1007	4000	2300	R	EM	Hyd	86	33¾		2⅛			18		7	20							
A-1017	4000	3200	R	EM	Hyd	90	41½		4⅛			24		11	23							
A-1020	6000	3400	R	EM	Hyd	90	41½		4⅛			24		11	23							
A-1011	10000	4500	R	EM	Hyd	89½	42		3⅛			26½		11⅛	22							

For abbreviations and references see page 343

For Directory of the Industrial Truck Manufacturers listed above, see page 286

POWERED LOW-LIFT FORK OR PLATFORM TRUCKS—*con.*

MAKE AND MODEL	Maximum Load Capacity (lb.)	Service Weight (lb.)—Excluding Battery	Operator—Walks or Rides	POWER: Motive	POWER: Lifting	OVERALL CHASSIS DIMENSIONS (Ins.): Length, Excluding Platform or Forks	Width	Height—To Top of Controls	Lowest Underclearance	PLATFORM DIMENSIONS (Ins.): Length: Minimum	Length: Maximum	Width: Minimum	Width: Maximum	Height Above Ground: Minimum	Height Above Ground: Maximum	FORK DIMENSIONS (Ins.): Length: Minimum	Length: Maximum	Width of Face	Lateral Outside Overall Width: Minimum	Lateral Outside Overall Width: Maximum	Height Above Ground: Lowered	Height Above Ground: Elevated
Raymond EL4P	4000	1360	R	EM	Hyd	31 1/16	34	55	2	30	48	18	24	(3)	(19)							
EL4F	4000	1410	R	EM	Hyd	30	34	55	1 1/2							30	48	9 1/4 ▲	24	30	3 1/4	7 1/4
Revolvator 51.21	4000	1060	W	EM	Hyd	34	32	50								32	60	9	25	30	3 1/4	7 1/4
52.11	4000	1130	W	EM	Hyd	29 1/2	32	50	3 1/2	36	72	18	26 1/2	(1)	(6)							
52.21	6000	1090	W	EM	Hyd	34	32	50								32	60	9	25	30	3 1/4	7 1/4
52.11	6000	1200	W	EM	Hyd	29 1/2	32	50	3 1/2	36	72	18	26 1/2	(1)	(6)							
Towmotor W	4000	920	W	EM	Hyd	30	(13)	46	1							30	72	9 ▲	27 ▲		3 1/4	7 1/4
Truck-Man DFP	3000	960	R	GE	Hyd	49 3/4	27	63	3							40	48	9	27	27	3 1/4	7 1/4
DHP	4500	905	R	GE	Hyd	47 1/2	27	63	3	32	72	18	48	(20)	3 1/4							
Yale & Towne KM4L	4000	2160	R	E-G	Lin	54 1/4	32 1/4	52	2 1/4	Var	Var	Var	Var	6 3/4	10 3/4							
K23E4	4000	3300	R	E-G	Lin	64	44 1/2	56	4 5/8	Var	Var	Var	Var	11	17							
K23E6	6000	3650	R	E-G	Lin	64	44 1/2	56	4 5/8	Var	Var	Var	Var	11	17							
K26S10	10000	4525	R	E-G	Lin	69	47	58	4 1/2	Var	Var	Var	Var	11 1/4	17							
K26S16	16000	5800	R	E-G	Lin	62 1/2	45	60	4 1/2	Var	Var	Var	Var	11 1/4	17							
K26G20L	20000	10475	R	E-G	Lin	81 3/4	60	68	3 3/4	Var	Var	Var	Var	11 1/4	17							
K35-6	6000	3650	R	E-G	Lin	64 3/4	44 1/2	56	8	Var	Var	Var	Var	17	23							
K26G20H	20000		R	E-G	Lin		60	66	5 1/2	Var	Var	Var	Var	17	23							
M4	4000	1140	W	E-G	Hyd	34 1/4	31	50	(14)	30	96	18	38	(1)	(6)							
M6	6000	1200	W	E-G	Hyd	34 1/4	31	50	(14)	30	96	18 1/4	38 1/4	(15)	(6)							
M4UW	4000	1735	W	E-G	Hyd	40 1/2	31	50	3 1/4	36	60	26	26	6	19							
M6UW	6000	1815	W	E-G	Hyd	40 1/2	31	50	3 1/4	36	60	26 1/4	26 1/4	6	19							
M4P	4000	1085	W	E-G	Hyd	37 1/2	31	50	2 3/4							30	84	9 1/4 ▲	25	48	3 5/8	7 5/8
M6P	6000	1120	W	E-G	Hyd	37 1/2	31	50								30	84	9 5/8 ▲	25	48	3 5/8	7 5/8
MS4	4000	1020	W	EM	Hyd	28	31	50	(16)	30	96	18	38	(1)	(6)							
MS6	6000	1060	W	EM	Hyd	28	31	50	(16)	30	96	18 1/4	38 1/4	(15)	(6)							
MS4P	4000	1120	W	EM	Hyd	31 1/2	31	50								30	84	9 1/4 ▲	25	48	3 1/4	7 1/4
MS6P	6000	1150	W	EM	Hyd	31 1/2	31	50								30	84	9 5/8 ▲	25	48	3 1/4	7 1/4
M4TP	4000	1000	W	E-G	Hyd	38	31	50	2 1/4							24	36	5 5/8 ▲	18	27	3 1/4	6 1/4
M7 1/2	7500		W	E-G	Hyd	34 1/8	31	50	3 1/4	30	96	18 1/4	38 1/4	(4)	(5)							
RL-4	4000		R	EM	Hyd	25 1/4	35	53 1/4	2 5/8	36	60	19	26	6	15							
RP-4	4000		R	EM	Hyd	25 1/4	35	53 1/4	2 5/8							36	60	9 1/4	25	36	3 1/8	7 1/8

ABBREVIATIONS

‡—Maximum.
†—Including platform or forks.
▲—Standard.
●—Based on 48" long platform or forks.
♦—Minimum.
(1)—6, 7, 9 or 11.
(2)—9 1/2, 10 1/2, 12 1/2 or 14 1/2.
(3)—12, 13, 15 or 17.
(4)—7, 9 or 11.
(5)—10, 12 or 14.
(6)—10, 11, 13 or 15.
(7)—1,000 to 1,200.
(8)—900 to 1,650 depending on length.
(9)—18 to 26.
(10)—3, 4, 5 or 6.
(11)—1,100 to 1,700 depending on length.
(12)—3 1/4 adjustable to 4 1/2.
(13)—27 with lead acid battery; 29 with alkaline battery.
(14)—2 1/4 to 3 1/4.
(15)—6 3/4, 7, 9 or 11.
(16)—2 1/4 to 2 3/4.
(17)—6, 7, 9, 10 or 10 3/4.
(18)—10, 11, 13, 14 or 14 3/4.
(19)—6 or 11.
(20)—7, 8 or 9 1/4.
E-G—Electric or gas-electric.
EM—Electric motor.
GE—Gasoline engine.
Hyd—Hydraulic.
Lin—Linkage.
Mec—Mechanical.
R—Rides.
Var—Variable.
W—Walks.

INDUSTRIAL TRUCKS—TOWING TRACTOR TYPE

Due to space limitations basic models only are presented for each of the companies represented. Variations, to fit the needs of the individual user are available from any of the manufacturers listed.

MAKE AND MODEL	Drawbar Pull (Lbs.)	Trailing Load (Tons)—Dry Level Concrete	Weight—Excluding Battery	OPERATOR: Rides or Walks	OPERATOR: Sits or Stands	Motive Power	3 or 4 Point Suspension	DIMENSIONS (Ins.): Wheelbase	Length—Overall	Width—Overall	Height—To Steering Wheel	Underclearance: At Truck Center	Underclearance: Lowest Point	TURNING RADIUS (Ins.): Outside	Inside	Width of Intersecting Aisle	No. of Forward Speeds	No. of Reverse Speeds
Allis-Chalmers HB-75	7500		12200	R	S	GE	4	72	125 1/2	70 5/8	66	14		164	76	103	4	1
HB-90	9000		13200	R	S	GE	4	72	125 1/2	70 5/8	66	14		164	76	103	4	1
HA-75	7500		12400	R	S	GE	4	72	125 1/2	70 5/8	66	14		164	76	103	4	1
HAD-75	7500		12500	R	S	DE	4	72	125 1/2	70 5/8	66	14		164	76	103	4	1
HA-90	9000		13400	R	S	GE	4	72	125 1/2	70 5/8	66	14		164	76	103	4	1
HB-120	12000		15780	R	S	GE	4	72	125 1/2	86	66	14		164	65	114	4	1
HA-120	12000		15980	R	S	GE	4	72	125 1/2	86	66	14		164	65	114	4	1
T6-24	2400		3250	R	S	GE	4	45	81 3/4	42	62	8 3/4		101 1/4	43 1/4	64 7/8	3	1
TD-24	2400		3350	R	S	DE	4	45	81 3/4	42	62	8 3/4		101 1/4	43 1/4	64 7/8	3	1
T6-30	3000		4200	R	S	GE	4	45	81 3/4	42	62	8 3/4		101 1/4	43 1/4	64 7/8	3	1
TD-30	3000		4300	R	S	DE	4	45	81 3/4	42	62	8 3/4		101 1/4	43 1/4	64 7/8	3	1
JG230	4500		5735	R	S	GE	4	62	102	66	62	9 1/2		118	35	87	4	1
JD230	4500		5880	R	S	DE	4	62	102	66	62	9 1/2		118	35	87	4	1
JG230N	3000		4215	R	S	GE	4	62	102	58	62	9 1/2		118	39	82 3/4	4	1
JD230N	3000		4360	R	S	DE	4	62	102	58	62	9 1/2		118	39	82 3/4	4	1
JG230P	3000		4155	R	S	GE	4	62	107	58	62	9 1/2		118	39	82 3/4	4	1
JD230P	3000		4300	R	S	DE	4	62	107	58	62	9 1/2		118	39	82 3/4	4	1
JG230WN	4500		6280	R	S	GE	4	62	102	66	62	9 1/2		118	35	87	4	1
JD230WN	4500		6725	R	S	DE	4	62	102	66	62	9 1/2		118	35	87	4	1

For abbreviations and references see page 344

For Directory of the Industrial Truck Manufacturers listed above, see page 286

INDUSTRIAL TRUCKS—TOWING TRACTOR TYPE—*continued*

MAKE AND MODEL		Drawbar Pull (Lbs.)	Trailing Load (Tons)—Dry Level Concrete	Weight—Excluding Battery	OPERATOR: Rides or Walks	OPERATOR: Sits or Stands	Motive Power	3 or 4 Point Suspension	DIMENSIONS (Ins.): Wheelbase	Length—Overall	Width—Overall	Height—To Steering Wheel	Under-clearance: At Truck Center	Under-clearance: Lowest Point	TURNING RADIUS (Ins.): Outside	Inside	Width of Intersecting Aisle	No. of Forward Speeds	No. of Reverse Speeds
Allis-Chalmers Cont'd	JG230WL	5000		6455	R	S	GE	4	85	125	58	66	8		148	63½	96	4	1
	JD230WL	5000		6600	R	S	DE	4	85	125	58	66	8		148	63½	96	4	1
	JG230PLS	3800		4815	R	S	GE	4	93	142	64	63	8		166	74	103¾	4	1
	JD230PLS	3800		4960	R	S	DE	4	93	142	64	63	8		166	74	103¾	4	1
	JG230PLD	4400		5635	R	S	GE	4	93	154	64	65	8		166	74	104½	4	1
	JG230PLD	4400		5780	R	S	DE	4	93	154	64	65	8		166	74	104½	4	1
Automatic	FT	250	7	785*	R	S	EM	3	30	46½	29	51¾	3¾		48		37	3	3
	FT-E	250	7	855*	R	St	EM	3	25	52	29		3¾		37	0	36	3	3
	BTN	600	17	4850*	R	S	EM	3	41	66	36		6		60	0	50	4	4
	MN	725	20¾	5300*	R	S	EM	4	40	75½	40	57	3¾		81	30	59	4	4
	BTW	600	17	5840*	R	S	EM	4	67		42		6		107	46	67	4	4
	TR	100	2¾	1080	W		EM	3	23½	38¾	30	50	2¾					2	2
	TRH	200	5¾	1640	W		EM	3	31	47⅞	32	54	2¾					2	2
	TRLE	100	2¾	840	W		EM	3	37⅝	49⅝	30	50	2¾					2	2
	LTWE	600	17	3550	R	S	EM	4	42	76½	43⅞		6		69	2½	59	4	4
Baker	TSSA	475		2800	R	S	EM	3	43	89½	41⅞		9		66		58	5	5
Barrett	RX-24	200	5	1400	RW	St	EM	3	32½	47¼	27½	55½	3½	3	36¼		39	4	3
	DX-12	200	5	940	R	S	EM	3	24	41½	26¾	43⅞	3½	3	30		48	2	2
	SX-24	200	5	1400	R	St	EM	3	32½	47¼	27½	55½	3½	3	38¼		39	4	
	TX-12	200	5	910	W		EM	3	24	41½	26¾	59††	3½	3	30		48	2	2
Clark	CKE-5	500	10	1850	RW	St	GE	3	34	62⅝	29	54¼	6¾	2¼	50	6	41½	1	1
	CK-20	2000	40	3200	R	S	GE	4	40	68	39	54½	8⅝	3½	62	5	52	3	1
	CK-26	2600	52	3400	R	S	GE	4	40	68	39	54½	8⅝	3½	62	5	52	3	1
	CT-21	2100	42	3000	R	S	GE	4	57	94	52	57	11	5¼	108	32		3	1
	CT-30	3000	60	3900	R	S	GE	4	64⅝	105⅝	52	57	12	5¼	129	52½		4	1
	CT-40	4000	80	5420	R	S	GE	4	64⅝	105⅝	65½	58	11	5¼	129	40		4	1
	CT-46	4600	92	6200	R	S	GE	4	64⅝	105⅝	65½	58	11	5¼	129	40		4	1
	CT-120	12000	240	15500	R	S	GE	4	69	122½	92	54	8¼	7	127	11⅜		4	1
	Tugger	200		1630	RW	St	EM	3	34	50¼	32	43	4⅜		46½	16½	46		
	CT-75	7500	150	9750	R	S	GE	4	62	107	69	56½	7	7	159	34½	103	4	1
	ECK-24	2400	48	3175	R	S	EM	4	44	79	41½	57¼	4¾	2½	74	9½	56	4	4
	ECK-30	3000	60	3655	R	S	EM	4	44	79	41½	57¼	4¾	2½	74	9½	56	4	4
Colson	T-800	800	11½	1700	R	St	GE	3	24½	56½	32	51½	4		40		42	2	2
Crescent	JW-1.5	1500	5	1600	R	S	EM	4	32	56	33	51	6	6	49		46	4	4
	JW-2	2000	7½	2800	R	S	EM	4	40	68	40	61½	6	6	70	13	30	4	4
	MW-3	3000	10	3200	R	S	EM	4	45	79	42	61½	6	6	98	37	72	4	4
	MW-4	4000	14	3400	R	S	EM	4					6	6				4	4
Hyster	Tug	540	27¼	1130	R	St	GE	3	36	74	42	50	6	6	51	0	55	Var	Var
Kalamazoo	3600	1200	20	1850	R		GE	3	51¼	84	42	48	7½	3	71	59		3	1
Lewis-Shepard	J6T	600	6	1500	R	S	EM	3	29⅝	46¼	32	51¾	3	3	42⅝			2	2
	E6T	750	7½	1800	RW	St	EM	3	30	44½	32	54	3	3	38½			2	2
Lift Trucks	KT	(1)		1200	W		EM	4	24½	42	26½	50¾	2¾	2¾				2	2
	KTS	(1)		1150	W		EM	4	19¼	36¾	32¾	50¾	2¾	2¾				2	2
	KTRS	(1)		1400	R		EM	4	27½	45	32¾	44	2¾	2¾				2	2
	KTR-12	(4)		1000	RW		EM	4	27½	45	32¾	44	2¾	2¾				2	2
	KTR-18	(5)		1120	RW		EM	4	32⅞	50⅞	Var	44	2¾	2¾				3	3
	KTR-24	(5)*		1240	RW		EM	4	35	55	Var	44	2¾	2¾				3	3
Market Forge	ST-1000	1000	10	825	R	S	E-G	3	25¼	48	30	45	5½	1¾	46	3	36	(2)	(2)
	UT-1000	1000	10	825	R	St	E-G		38½	58½	30	45	4	1¾	56	6	48	(2)	(2)
Mercury	A-440	2300	60	3000	R	S	GE	3	41⅝	70¾	40	56	10	4	54½			3	1
	A-440	2600	65	3600	R	S	GE	3	41⅝	70¾	40	56	10	4	54½			3	1
	A-460	2400	60	3200	R	S	GE	4	40	78	41	56	7¼	4	62			3	1
	A-460	3000	75	4000	R	S	GE	4	40	78	41	56	7¼	4	62			3	1
	A-550	2500	60	2900	R	S	EM	4	45	76	41	64	8½	4	69		64	4	4
	A-560	1000	25	1450	R	S	EM	3	41	70	34	51½	8	3¾	60½		59	3	3
	A-800	5500	135	5400	R	S	EM	4	60	94	44	66½	8	4	100			4	4
	A-750	3000	75	3300	R	S	EM	3	48	86½	42	52	5	5	72			4	4
	A-930	3000	75	4000	R	S	GE	4	63¼	107¼	51	63	9¼	7½	125			4	1
	A-940	4000	100	5000	R	S	GE	4	63¼	107¼	51	63	9¼	7½	125			4	1
	A-950	5000	125	6300	R	S	GE	4	63¼	107¼	67	63	9¼	7½	125			4	1
Payloader	TM	16000	400	25000	R	S	GD	3	86	182	96	80	22	16	294	149		4	4
	TC-60	6000	150	7800	R	S	GE	3	60	120	66	58¾	8½	6¼	121	34	92	3	1
	TU-120	12000	300	15000	R	S	GD	3	79	143	80	61	14	12	238	122	112	4	4
Revolvator	52.30	700	Var	1450	W		EM	4	Var	Var	32	50		3½			Var	2	2
Towmotor	K5-30	3000	73	3600	R	S	G-L	4	36½	67†	40½	54	8	3½	64	9½	56	2	2
	K5-33	3300	80	3990	R	S	G-L	4	38½	67†	40½	54	8	3½	64	9½	56	2	2
	K5-36	3600	88	4260	R	S	G-L	4	38½	67†	40½	54	8	3½	64	9½	56	2	2
	K5-40	4000	96	4680	R	S	G-L	4	38½	67†	40½	54	8	3½	64	9½	56	2	2
Yale & Towne	K24JS	3000		3100	R	S	E-G	4	39½	67	39½		8½		76		57	4	4
	K24DT	2000		2650	R	S	E-G	4	42½	72	40½	60	8½		61½		55	4	4
	MT	(3)	4	1470	W		E-G	3	30	48½	32¾		2¾	2¾	43¼		43¼	2	2
	MSGT	(3)	4	990	W		EM	3	42¼	57⅞	31		1¼	1¼				2	2 †

ABBREVIATIONS

+—Plus.
*—Including battery.
†—Not including towing eyes.

(1)—200 to 500.
(2)—Two standard; three optional.
(3)—200 to 700.
(4)—200 to 500.
(5)—340 to 500.
DE—Diesel engine.
E-G—Electric or gas-electric.
EM—Electric motor.
GD—Gasoline or diesel engine.
GE—Gasoline engine.
G-L—Gasoline or LPG engine.
R—Rides.
RW—Rides or walks.
S—Sits.
St—Stands.
Var—Variable.
W—Walks.

For Directory of the Industrial Truck Manufacturers listed above, see page 286

Fosbond zinc-phosphating Process made EVEN BETTER with new, improved

actidip

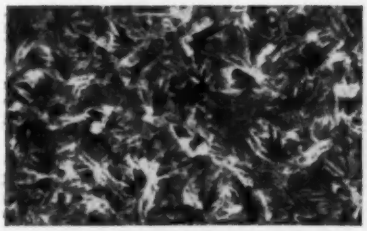
- **Gives you one-coat painting**
- **Lowers effective phosphate weight as much as 70%**
- **Reduces maintenance cost by cutting down sludge**
- **Gives more and better surface activation at reduced cost**

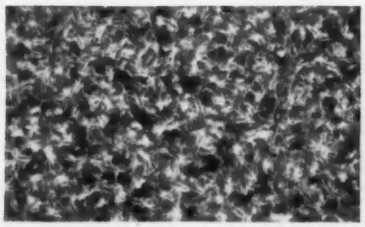
Painted metal surfaces (on automobile bodies, home appliances, and other products) enjoy greatest corrosion-resistance when protected beforehand with Pennsalt Fosbond® coatings. Now, a pre-Fosbond bath with ACTIDIP® brings about even greater crystal refinement, prevents powdering, allows finishing with a single coat of paint. New, improved ACTIDIP, used as a pre-rinse, reduces subsequent zinc phosphate coating weights up to 70% over those coatings applied without surface treatment. As an ingredient in Pennsalt Activated Cleaners, ACTIDIP activates during the pre-cleaning cycle and reduces zinc phosphate coating weights by as much as half.

With recent improvements in formulation, ACTIDIP makes your job easier, boosts your coating quality: (1) Free-flowing and non-caking, *new* ACTIDIP dissolves more easily, speeds tank charging; (2) ACTIDIP has greater stability, will not lose its superior activating power at higher cleaning temperatures; (3) ACTIDIP, alone or in a Pennsalt Activated Cleaner, reduces sludge and maintenance costs in the phosphating bath.

Two convenient forms. New, improved ACTIDIP comes to you in a choice of two forms: (1) Super ACTIDIP Powder for use in its own activating bath between cleaning and phosphating; (2) Pennsalt Activated Alkaline Cleaners for soak or spray cycles—cleaning and activation in one bath. Either form you choose gives your organic finish a better start towards corrosion-resistance, long-lived luster, and lower cost.

Find out why Pennsalt's Fosbond Process means the best in phosphate coatings, and how ACTIDIP can bring you better finishing at lower costs. Ask your Pennsalt man or write Metal Processing Dept. 277, Pennsylvania Salt Manufacturing Company. East: Three Penn Center Plaza, Philadelphia 2, Pa.; West: Woolsey Bldg., 2168 Shattuck Ave., Berkeley 4, Calif. In Canada: Pennsalt Chemicals of Canada, Hamilton, Ontario.





Sensational reduction in phosphate-coating weight is shown by these photomicrographs (enlarged 84 times). Untreated panel (left) requires 1006 mg./sq. ft. for adequate phosphate protection, while ACTIDIP-treated panel (right) requires only 277 mg./sq. ft. for effective coverage.

Pennsalt Chemicals

Metal Cleaners • Phosphate Coatings • Cold-Working Lubricants

A BETTER START FOR YOUR FINISH



Introducing the COMET II

An Advanced Conception of Valving by Ross!

- Direct solenoid operated, balanced spool 4-Way—for air or oil service.
- Engineered and built to tolerances of .0001".
- Conforms to JIC standards.
- Complete valve cycle within 0.033 sec.
- Made of aluminum—single solenoid, base mounted weighs only 3½ lbs.
- Working surfaces almost as hard as a diamond.
- Small and compact—7¼" by 3½" by 3⅞". ¼" diameter flow capacity.
- Available with ¼" or ⅜" pipe tap for inline, manifold or base mounted; single solenoid spring return, double solenoid momentary; double solenoid three position.

Write, wire or phone for complete information

ROSS Control VALVES

See the New Comet II at the ASTE Show, Booth 696.

Ross OPERATING VALVE COMPANY

128 E. GOLDEN GATE AVENUE • DETROIT 3 • MICHIGAN



now...

VALUABLE DIE-SET DATA FOR ALL TOOL ENGINEERS

It's easy-to-look-at! More than 200 pages are specially edited and arranged for quick and simple reference. Full color is used to make tables easier to read, illustrations more clear. The easy-to-look-at format plainly indicates all optional features. Covering the complete Danly "Leadership Line", this catalog presents full dimensional data and specifications for all Danly Die-Sets, Diemakers' Supplies, Bolster Plates and Bolster Plate Accessories. Get your copy of this new easy-to-look-at Danly catalog. *Write for it today.*

EASIER SELECTION—
MORE COMPLETE DESIGN INFORMATION

DANLY®
DIE SETS AND DIEMAKERS' SUPPLIES

WRITE FOR YOUR FREE COPY TODAY!

DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Ave., Dept. B, Chicago 50, Ill.

How Sundstrand "Engineered Production" Has Been Applied To:

Production requirements dictate the proper design and tooling for all machine tools. If the required production is low and many similar parts are to be produced on the same machine, the most economical type of tooling and equipment is one that can be readily adjusted so that there will be a minimum of down time for change over. If the required production is high, the reverse is true, since the problem then is primarily one of tool maintenance coupled with automatic handling of work parts.

Sundstrand engineers have accumulated a vast knowledge of tooling from handling a wide variety of jobs. Here are just a few examples of Sundstrand "Engineered Production" as applied to turning problems.

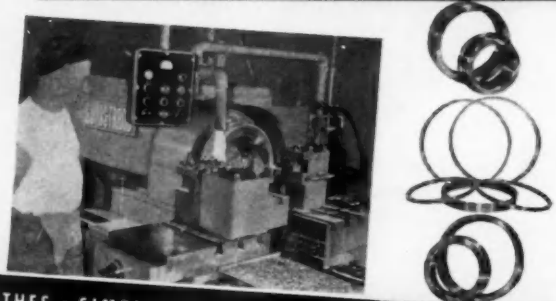
1 High Production Turning



The lathe above is a good illustration of a high production setup. Motor rotors are turned and faced at a production rate of over 200 pieces per hour. The machine is automatically loaded and unloaded, parts and tools are gaged for wear. Machine runs approximately an 8 hour shift, re-setting the tools automatically before a normal replacement of the tool head is necessary.

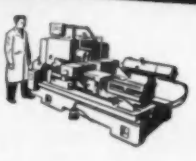
Pistons, cam shafts, crankshafts, etc. lend themselves to many of the features incorporated in this machine. If you have parts of this nature produced in large quantities, see what Sundstrand "Engineered Production" service can develop for you.

2 Small Lot Turning

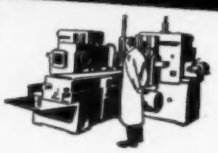


SUNDSTRAND "Engineered Production" Service* *REG. U.S. PAT. OFF.

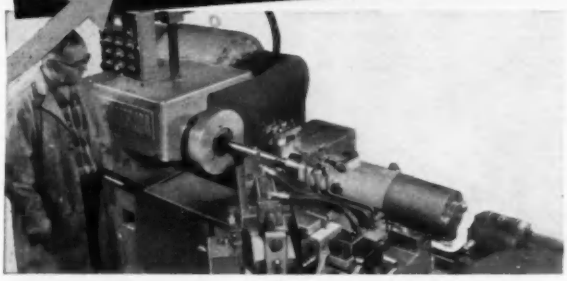
AUTOMATIC LATHES | SIMPLEX RIGIDMILS | DUPLEX RIGIDMILS

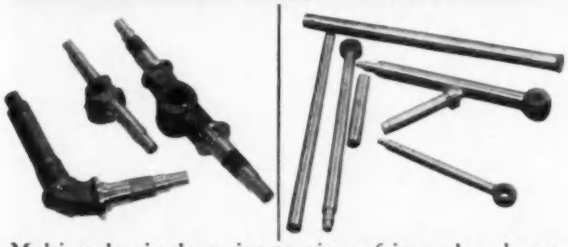






3 Tracer Turning

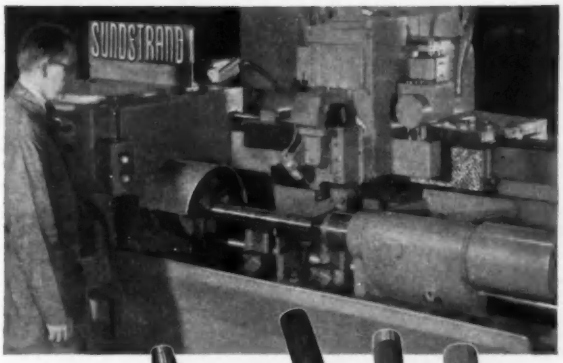




Multi-cycle single point turning of irregular shapes can be obtained quickly and easily with new Sundstrand Automatic Lathes equipped with this tracer control. The lathes are provided with a template controlled tracing unit, which replaces the regular front carriage. Ruff, semi-finish and finish cuts can be made with one turning tool in one automatic cycle.

4 Shaft Turning

In the illustration at the left below, more simple tooling, easily adjusted, has been provided to handle a number of different sizes of similar parts. Tool adjustments are easy because of the simplicity of the tooling, and the quick set cycle control of the Sundstrand Automatic Lathe makes it profitable to use multiple tooling on jobs of this nature.

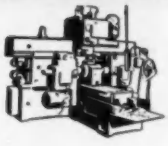


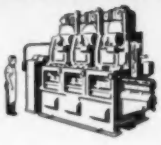


This machine is offered with punch card control or manual operation. With punch card control, it brings production control to the engineering department. Again, it is a design solution to turning of shafts, but talk to Sundstrand Engineers and investigate Sundstrand "Engineered Production" for the proper solution to your job.



TRIPLEX RIGIDMILS | SPECIAL MACHINES

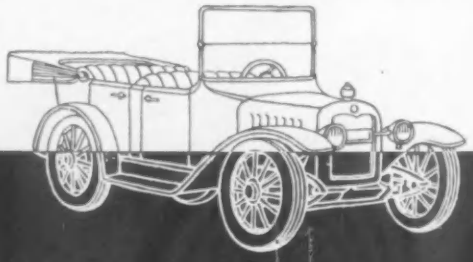




Before You Buy Any Turning Equipment Check with Sundstrand *"Engineered Production"*

These are only a few of many applications of Sundstrand "Engineered Production" as applied to turning problems. Your job may be entirely different, but we invite you to investigate. Call in a Sundstrand engineer. There is no obligation for this service.

SUNDSTRAND
Machine Tool Co.
2571 Eleventh St. • Rockford, Ill., U.S.A.



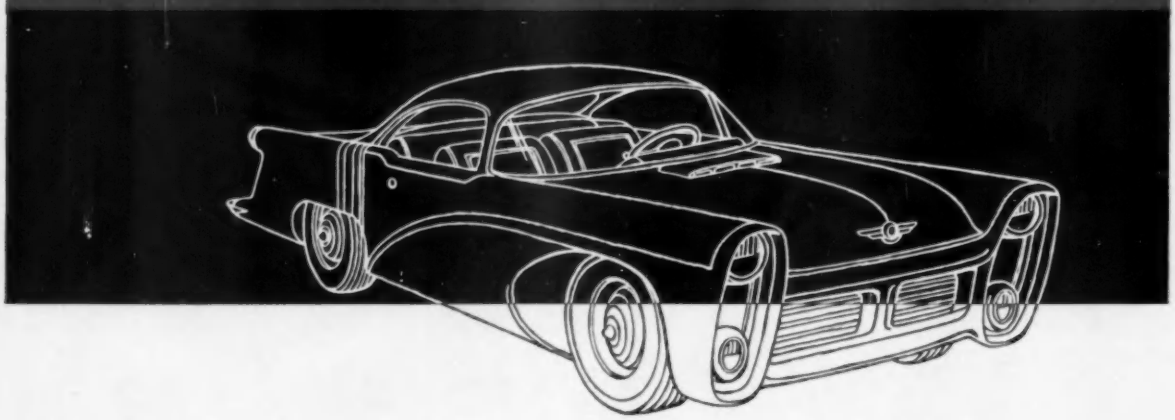
Aetna

1916 40 1956

YEARS

FIGHTING FRICTION

BALL BEARINGS • ROLLER BEARINGS • PRECISION PARTS



AETNA BALL AND ROLLER BEARING COMPANY

DIVISION OF PARKERSBURG-AETNA CORPORATION • 4601 SCHUBERT AVENUE • CHICAGO 39, ILLINOIS

In Detroit: SAM T. KELLER, 2457 Woodward Ave.

COMPLETE *Finishing* SYSTEMS

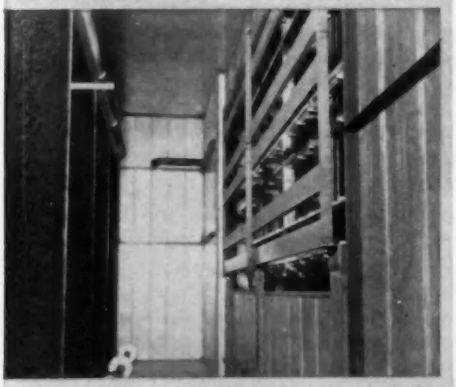
. . . for ENAMELS • LACQUER • PAINT • VARNISH



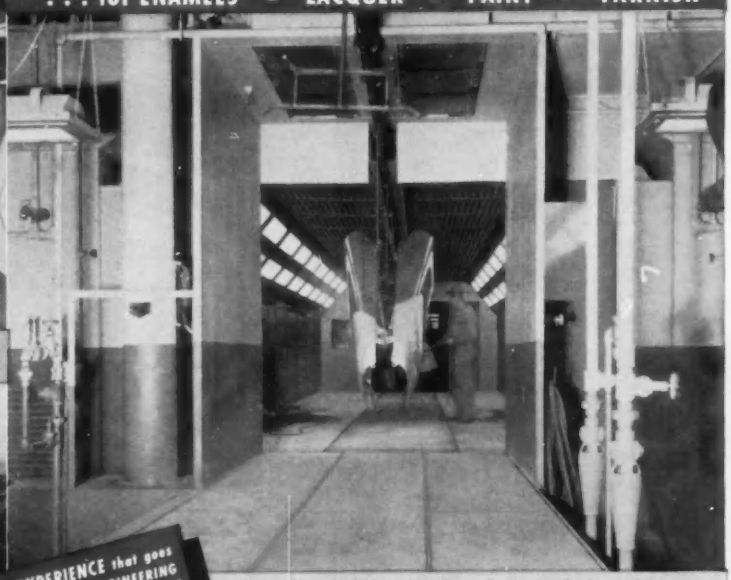
Mahon ventilated Flash-Off Enclosure between Hydro-Filter Spray Booth and the Finish Baking Oven on the roof above.



Mahon filtered Air Supply System and Mahon Finish Baking Oven installed on the roof of the plant.



Interior of Mahon Air Supply System showing one bank of Filters of the Air Filtering Equipment and the Direct Gas-Fired Air Preheating Unit.



. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!

Mahon Down-Draft Hydro-Filter Spray Booth specially designed to accommodate a variety of automobile parts other than body parts.

Small Parts FINISHING LINE OCCUPIES MINIMUM SPACE INSIDE PLANT!

To meet requirements in this particular installation, where floor space was a restricting factor, Mahon engineers built the space-consuming units of the finishing system on the roof of the plant. This is not unusual . . . today, Mahon can point to hundreds of installations in which major parts or entire finishing systems have been built and housed on the roof of plants where floor space inside the plant was at a premium. If you are contemplating new finishing equipment, you, too, will want to discuss methods, equipment requirements and possible arrangements with Mahon engineers. You will find them better qualified to advise you, and better qualified to do the all-important planning, engineering and coordinating of equipment which is the key to fine finishes at minimum cost. And, if you care to investigate, you will find that Mahon equipment will serve you better . . . because, Mahon equipment is engineered better and built better for more economical operation over a longer period of time. See Mahon's Insert in Sweet's Plant Engineering File, or write for Catalog A-656. Better still, why not have a Mahon engineer call at your convenience.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO

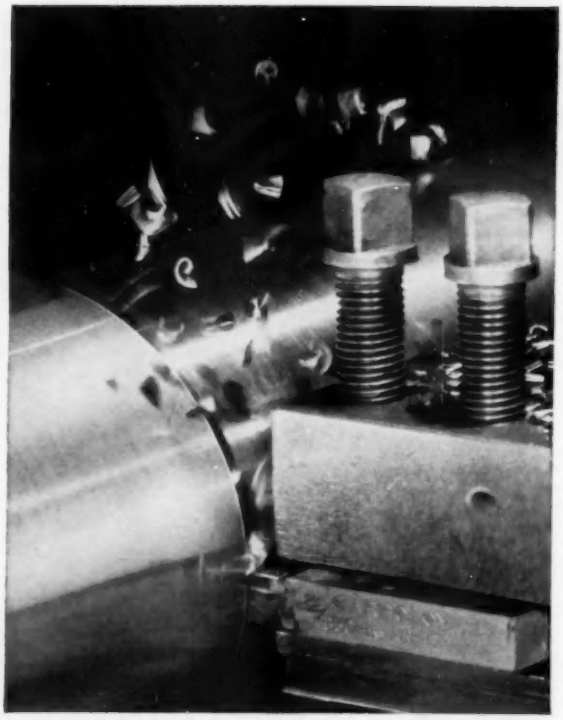
Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems, Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

MAHON

FOUR POSITIVE STEPS YOU METAL AT THE LOWEST



Carboloy Machinability Computer accurately determines most efficient setup conditions.



Carboloy Grades 350 and 370 cut faster, wear longer. (Picture taken at 1/1000 second).

1 **Solve machining problems with the new Carboloy® Machinability Computer,** and you'll cut out hours of nonproductive setup time, and eliminate wasteful tryout runs. Faster, more accurately than any other method, the Computer determines the most efficient operating conditions for both simple and complex jobs.

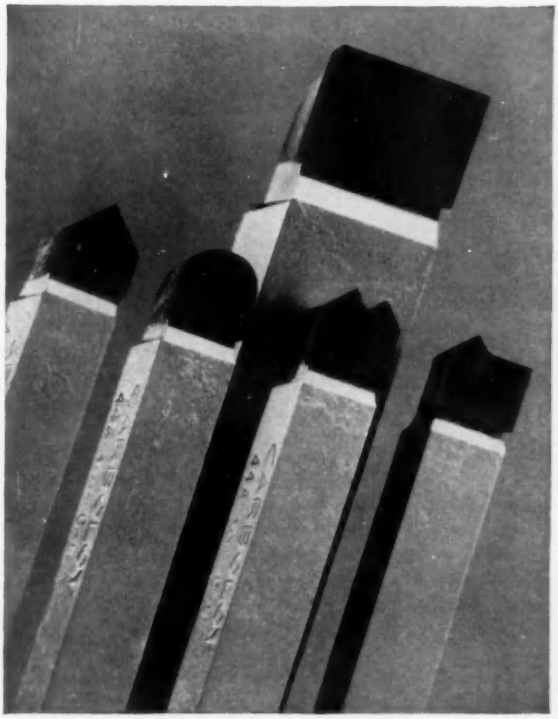
In seconds, it calculates the effect of the 19 most critical machining variables on the material to be cut, the cutting tool, and the cutting conditions. It shows how to set up optimum cutting conditions the first time a job is run, as well as how to improve existing setups. Price of the Computer is $495, f.o.b. Detroit.

2 **Cut steel with Carboloy® Grades 350 and 370,** and you'll increase production while reducing downtime and tool costs. Hundreds of in-plant comparison tests have proved these grades greatly outperform conventional carbides . . . providing the lowest tool-cost-per-piece of any carbide on the market today.

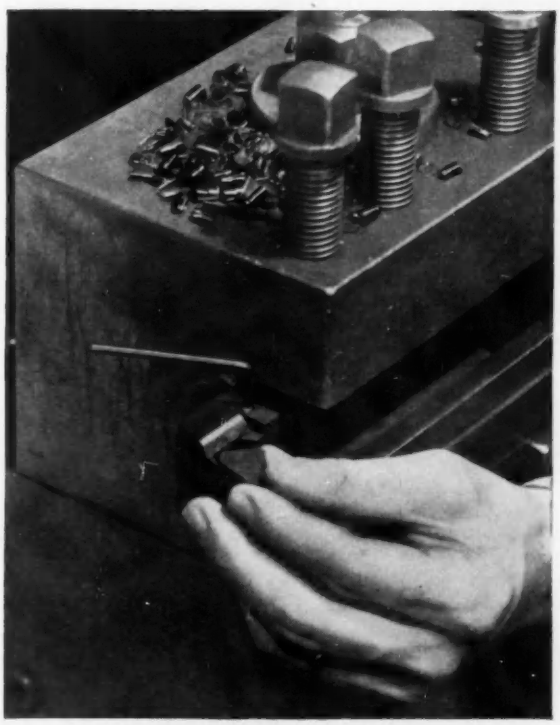
There are no "equivalent grades" for Carboloy 350 and 370, because these grades have a built-in structural rigidity that enables them to take deeper, more punishing cuts without the edge deformation encountered in other carbides. They will cut faster, wear longer, and get more production from your existing machine tools.

Consistent use of these Carboloy products will help you get maximum output from your machine tools . . . at lowest possible cost. For more information and tooling assistance, contact your local Authorized Carboloy Distributor (listed in the Yellow Pages of your phone book), or your Carboloy Representative.

CAN TAKE NOW TO CUT POSSIBLE COST



Style C Standard Carboloy Tool and typical special shapes quickly adaptable from it.



New Carboloy Toolholders can be indexed quickly, easily . . . right in the machine.

3 Apply Standard Carboloy Tools wherever possible, and you'll eliminate many higher cost "specials," while reducing over-all single-point tool inventories by as much as 30%. By standardizing, you will be using only 13 basic styles —"as is," or ground to special shapes — on up to 80% of your setups where braze-type tooling is used.

There are no inventory problems when you use "standards." These versatile tools are stocked in grades to handle any job from roughing to finishing on metals or nonmetals. You can get immediate delivery and tooling assistance from your local Authorized Carboloy Distributor.

4 Make maximum use of the new, easier-to-use Carboloy Toolholders, and you'll reduce tool-change time and lower insert costs. These holders employ a special clamping device combined with a carbide chipbreaker, which makes it possible to index a blank rapidly and accurately without removing the holder from the machine.

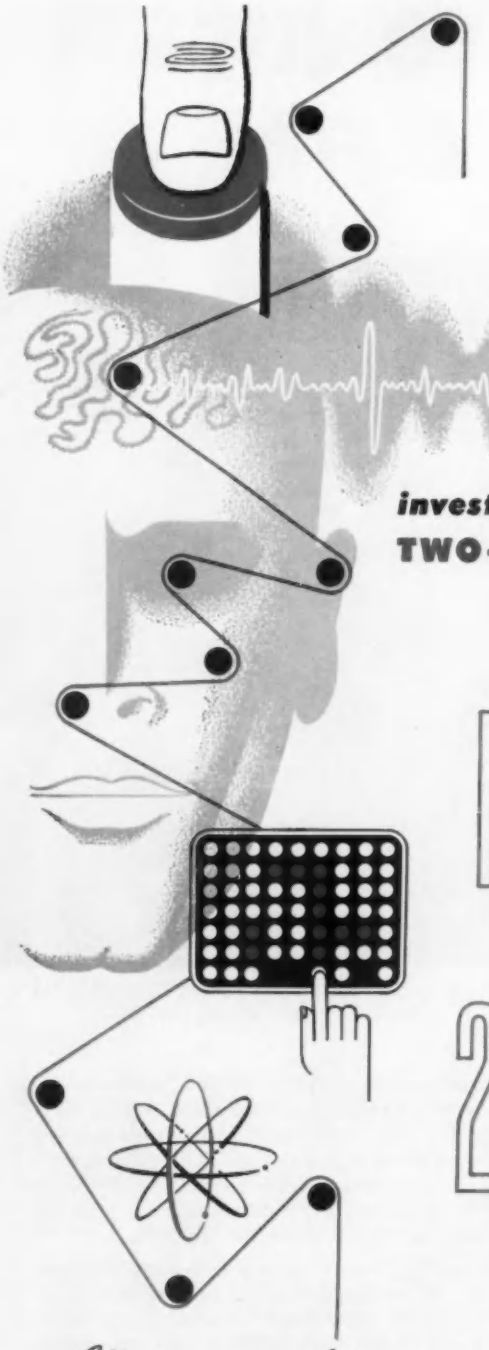
In addition, they utilize a shock-absorbent pad beneath the cutting blank, to permit the use of thinner, more economical inserts at increased speeds and feeds. And, because they are versatile, precision tools, they can be quickly adapted to many jobs you are now forced to tool with costly "specials."

CARBOLOY

DEPARTMENT OF GENERAL ELECTRIC COMPANY

11151 E. 8 Mile Road, Detroit 32, Michigan

"Carboloy" is the trademark for products of the Carboloy Department of General Electric Company



need creative automation assistance?

investigate W. F. & JOHN BARNES TWO-FOLD AUTOMATION SERVICE

1 ENGINEERING COMPLETE PRODUCTION-LINE SYSTEMS

Complete service includes planning step-by-step sequence of operations and the individual engineering of processes, methods and equipment to meet your production needs. Barnes' creative engineering, developed over a period of 80 years in designing and building high production machine tools, can be depended upon to provide you with the latest in cost-cutting methods. Our highly versatile engineering staff will work with you as a team to solve problems quickly and efficiently.

2 DESIGNING AND BUILDING SPECIAL UNITS

To meet specific work-handling or processing needs, Barnes' engineers have designed and built special conveyors, turn-over mechanisms, inspection, and assembling equipment to suit either automatic or semi-automatic requirements. Hundreds of units are today profitably serving a wide range of industries. Because electrical, hydraulic, mechanical, tool and fixture engineering is closely coordinated at Barnes under one roof, you save time and eliminate divided responsibility.

Write for Free Literature

Ask for Production Analysis

Find out today why more and more production executives are turning to Barnes for help with their automation problems. Barnes' creative engineering staff will be pleased to analyze your requirements, offer recommendations, and provide you with a cost estimate in a formal proposal, if you desire.

Builders of Better Machines and Equipment since 1872

W. F. & JOHN BARNES

AUTOMATION SECTION

425 S. WATER ST. • ROCKFORD, ILLINOIS

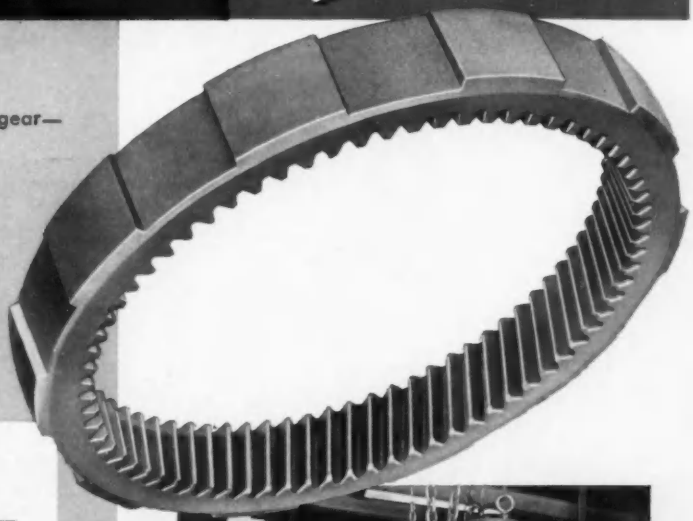
SPECIAL MULTIPLE SPINDLE MACHINE TOOLS • SPECIAL PROCESS EQUIPMENT • SPECIAL ELECTRICAL CONTROLS

Broach Your Helical Transmission Gears *and Cut Your Costs*

This is a 73 tooth automatic transmission gear—5.5853 P.D., 14 pitch, 20° pressure angle.

It is broached in just one pass. A single shaving operation completes it.

All critical dimensions including lead and concentricity are held to extremely close tolerances.



Broaching time	25 Seconds, **floor to floor**
Shaving time	40 Seconds, **floor to floor**
Total machining time	65 Seconds

The 7 foot Naloy Broach used also chamfers the gear tooth edges as it cuts the teeth.

The constant and intimate contact Red Ring engineers have with advanced gear practice gives them a very real advantage in the design and production of gear tooth broaches.

Write **for specific suggestions on your broaching operations.**

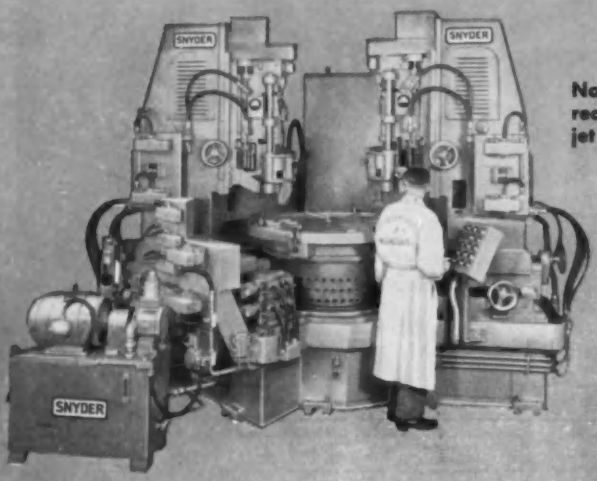


SPUR AND HELICAL GEAR SPECIALISTS
ORIGINATORS OF ROTARY SHAVING AND ELLIPTOID TOOTH FORM

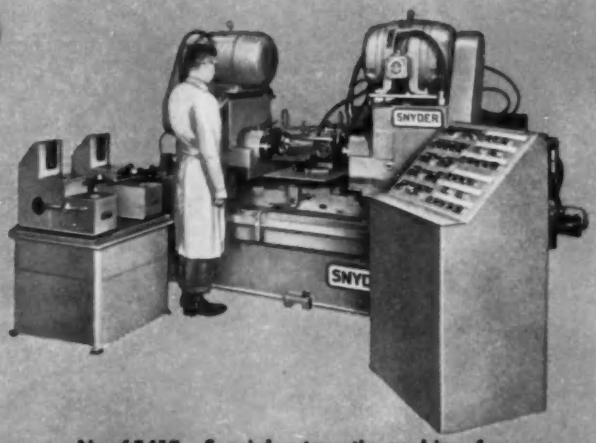


NATIONAL BROACH AND MACHINE CO.
5600 ST. JEAN . . . . . DETROIT 13, MICHIGAN
WORLD'S LARGEST PRODUCER OF GEAR SHAVING EQUIPMENT

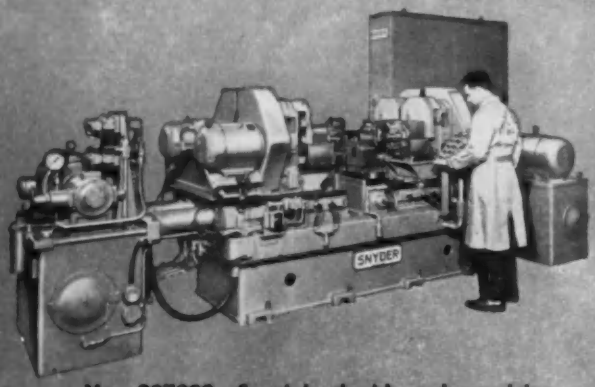
7332



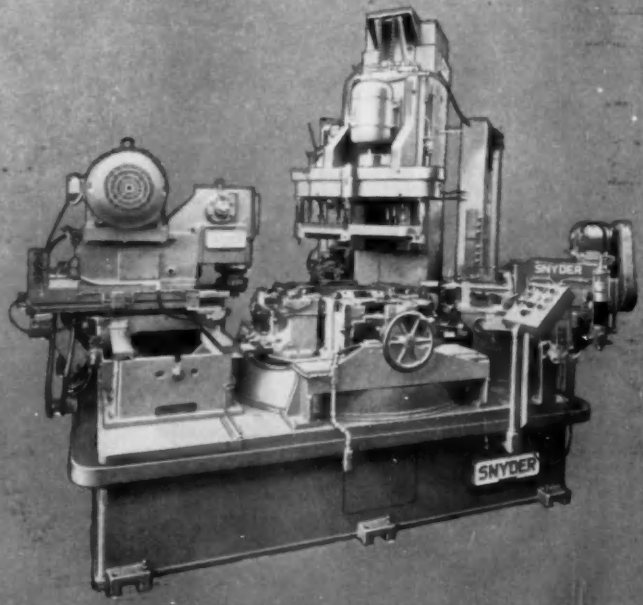
No. 70165—Special index machine to drill and ream holes in rims of outer shroud spacers for jet engines. Production 2 parts per hour.



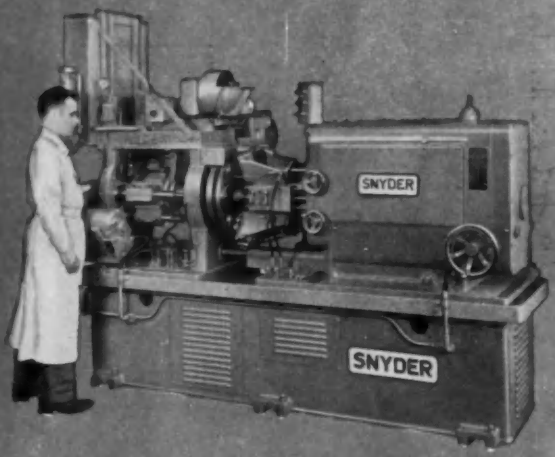
No. 65412—Special automatic machine, for weighing and precision balancing a variety of heavy-duty and diesel engine connecting rods from 7⅜" to 12" center distance. Weighs rods and automatically balance mills to plus or minus 2 grams.



No. 207390—Special, double-end precision boring machine for finish boring, counterboring and chamfering counter shaft, intermediate and shifter shaft holes on power take-off cases. Production 82 pieces per hour at 80% efficiency.



No. 73902—Special 4-station automatic index machine for milling joint face, drilling and reaming vertical and horizontal holes in exhaust manifolds. Production 80 pieces per hour at 80% efficiency.



No. 68526—Special double end trunnion machine, fully automatic, for machining special aircraft rivets. Machine is automatically loaded and unloaded. Production rate varies with size of rivet.

SNYDER VERSATILITY

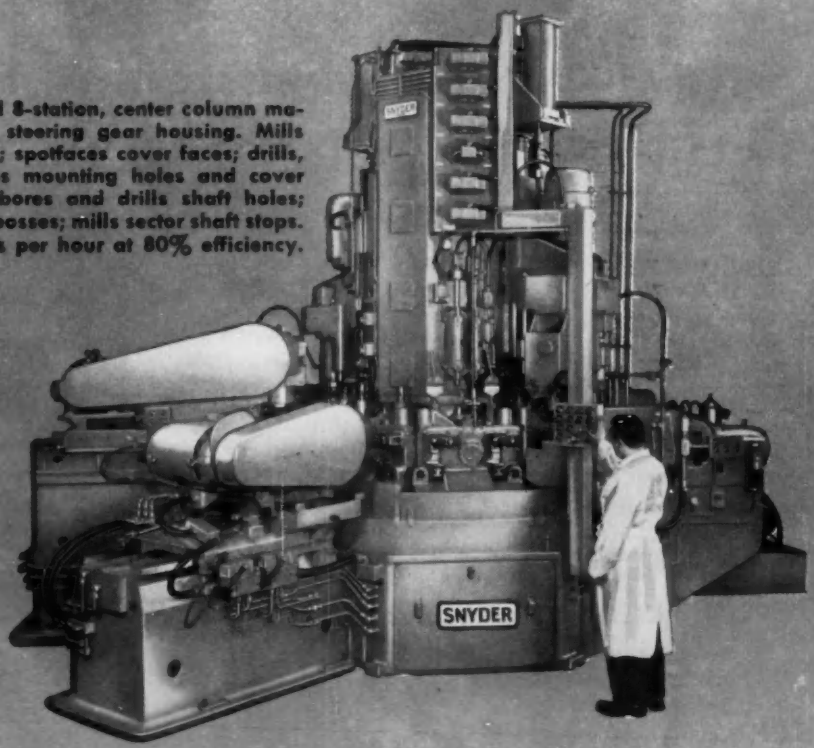
in engineering and building metal-cutting machines includes not only the great Snyder line transfer machines with automation, but also many smaller and diversified machines in which the standards of performance and economy are no less exacting. A few representative examples are shown.

SNYDER

TOOL & ENGINEERING COMPANY

3400 E. LAFAYETTE • DETROIT 7, MICHIGAN

31 Years of Special Machine Tools with Automation



No. 72976½—Special 8-station, center column machine for processing steering gear housing. Mills pads and cover faces; spotfaces cover faces; drills, countersinks and taps mounting holes and cover holes; rough counterbores and drills shaft holes; mills two Welch plug bosses; mills sector shaft stops. Production 260 pieces per hour at 80% efficiency.

Gardner-Denver . . . Serving the World's Basic Industries



6-spindle Multiple Nut Setter assembles auto flywheel to crankshaft.

A New Keller Tool Fastening Technique Sets New Highs in Assembly Efficiency

Results: reduced costs — control of quality

If you have to set two or more nuts or bolts at a time, you've got a job for Keller Tool Multiple Spindle Nut Setters.

In one simple unit, from 2 to 20 spindles do the work in a fraction of the time required with a single spindle tool.

Designed for extreme flexibility: Standard air motors of any size can be combined in the same tool. Tight bolt clusters . . . different torque requirements . . . bolts at different elevations are adaptations. Handles and suspension can be positioned where desired. Let Keller suggest a setup for you.

Features you can use—profitably!

1. Adjustable torque control on individual spindles. Fourteen sizes cover torque range from 4 to 190 ft.-lb.
2. Torque held to close tolerances—equal to that of accurate hand tools.
3. Easily adapted to changing needs—a new mounting plate does the trick.

GARDNER - DENVER

KELLER TOOL division, Grand Haven, Michigan

THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

Continental Quality Standards Met by P-D Paint Finishing Systems



Throughout the entire automotive industry (as in many other fields) quality standards are paramount. In such a competitive field, the finish of products must receive public acceptance. Plant engineers of the Continental Division—Ford Motor Company established extremely exacting standards when planning the set-up and equipment of their new plant. As every one now knows, the Continental Mark II is not a mass-produced automobile. Its manufacture is done under rigid quality controls. In this new plant the limited production of this splendid automobile is handled on a one floor layout where space allotments for finishing operations were most carefully planned. The finishing systems installed here by PETERS-DALTON provide continuous operations through bonderite dry-off ovens, bake ovens, wet sand dry-off ovens, and spray booths with superb air make-up installations. Of course, the P-D Hydro-Whirl Method of cleaning and replacing air is a most important adjunct to smooth and flawless operations.

In whatever your field of manufacture, if you have finishing problems or needs, call upon P-D engineering knowledge. Whether your requirements are for a single spray booth or a complete finishing system, remember—we are exclusively contract manufacturers and can efficiently design, engineer, fabricate, and install the equipment to meet them and—within your space limitations.

We'll be glad to tell you more. Just write, wire or phone.

Representatives in principal cities.



1. All operations on one level, as pictured, include spray booths and air make-up.



2. Sides of booths with wet sand dry-off oven and bonderite dry-off oven.

P-D Peters-Dalton INC.
A SUBSIDIARY OF DETROIT HARVESTER CO.
17930 Ryan Road • Detroit 12, Michigan

- *Hydro-Whirl Paint Spray Booths*
- *Industrial Washing Equipment*
- *Drying and Baking Ovens*
- *Hydro-Whirl Dust Collecting Systems*



How proximity means profit in Southeastern Michigan

If you are a supplier to the automotive industry, your logical and profitable location is right here in the heart of autoland — Southeastern Michigan.

Here design and engineering decisions are made every day on the component parts of tomorrow's cars—evaluations of vital importance to you.

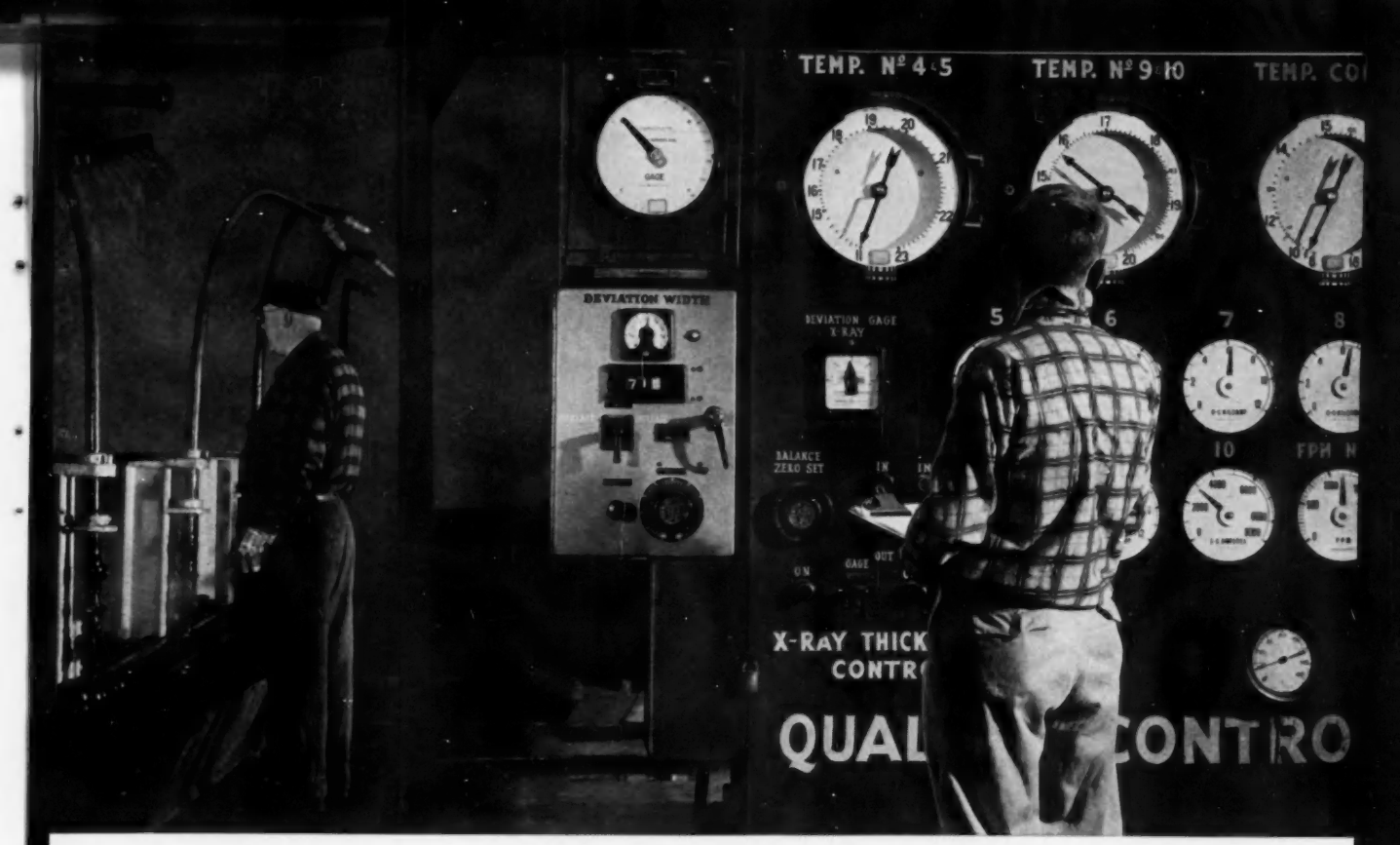
As important as is this invaluable proximity to those you supply are the physical factors that make Southeastern Michigan ideal for industrial expansion. Such tangible advantages as natural resources, raw materials, transportation of every kind, ample electric power and a vast pool of skilled and unskilled labor—all these and more point to Southeastern Michigan as the place to put your plant.

Ask us to send you a list of small Southeastern Michigan towns which will favorably consider building a plant for you, on an attractive, economical lease-purchase basis.

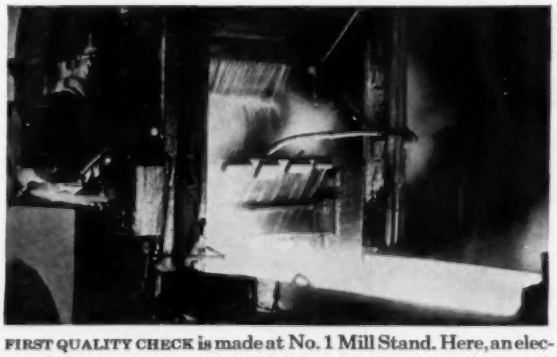
THE DETROIT EDISON COMPANY
DETROIT 26, MICHIGAN

for more information on the industrial advantages of Southeastern Michigan write:

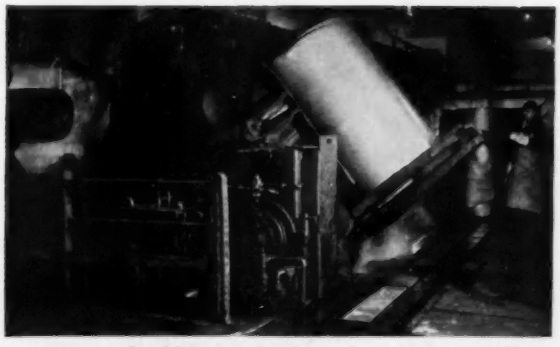
PLANT LOCATION SERVICE · AREA DEVELOPMENT DIVISION



How Great Lakes Steel *guides* quality



FIRST QUALITY CHECK is made at No. 1 Mill Stand. Here, an electronic pyrometer relays the strip's temperature to the panel.



FINAL CHECK in this operation is made at the coiler. From slab to coil, the control panel spells far better quality.

Here's one of several electronic operation panels that take the guesswork out of quality control at Great Lakes. You'll find this one guiding the entire operation of the 96-inch continuous mill.

As the red-hot strip races from roll stand to roll stand and on to the coiler, the temperature, speed, width and thickness of the strip *at each stage* are instantly shown on the panel.

A glance at the panel tells the operator if any adjustments are necessary to assure a finished product of the highest quality—a product that will stand the rigid test of your specifications.

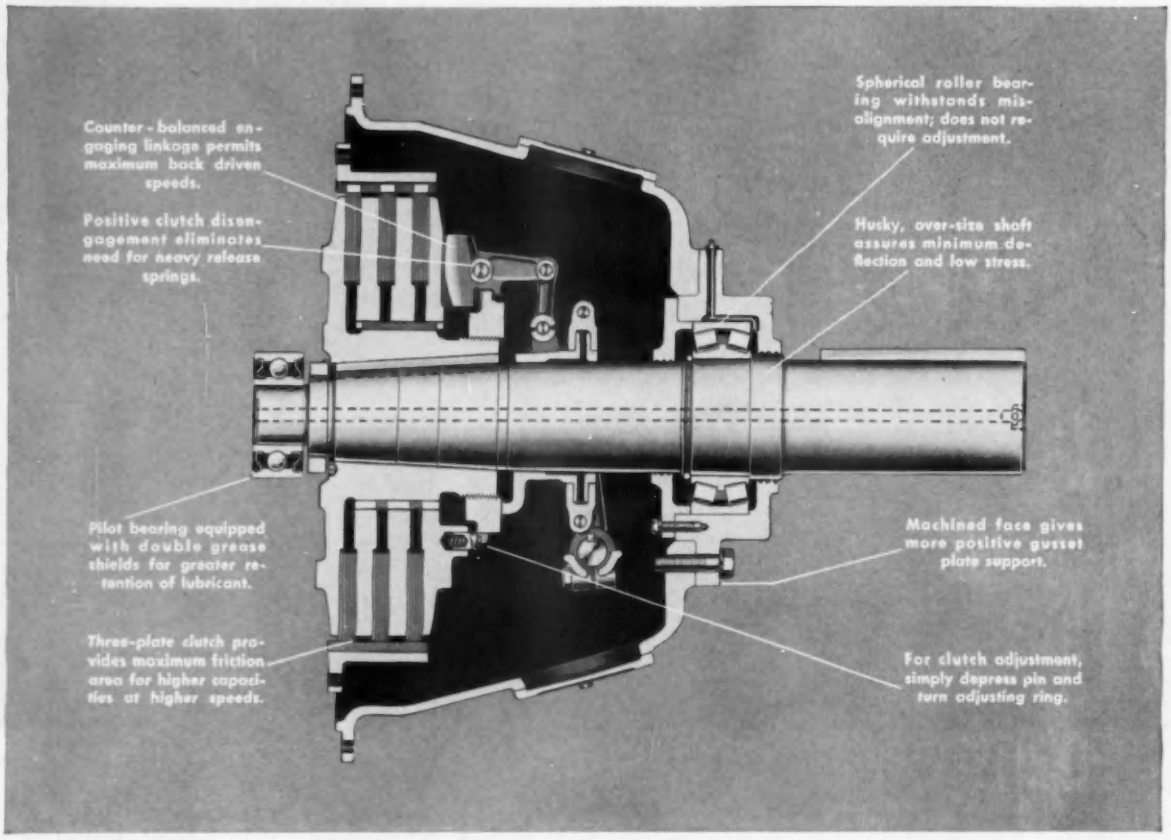
This is further proof that Great Lakes has what it takes—the experience and the very latest equipment—to make your product even better. Our representative is just one telephone call away.

GREAT LAKES STEEL CORPORATION

Ecorse, Detroit 29, Michigan • A Unit of

NATIONAL STEEL CORPORATION

District Sales Offices: Boston, Chicago, Cincinnati, Cleveland, Grand Rapids, Houston, Indianapolis, Lansing, Los Angeles, New York City, Philadelphia, Pittsburgh, Rochester, St. Louis, San Francisco, Toledo, Toronto.



A new Power Take-Off for higher-speed, higher-horsepower engines

Here is the all-new Twin Disc Model SP-318 heavy-duty Friction Power Take-Off—designed and engineered especially to meet the extra requirements of the new engines in the 350 to 375 hp range, operating up to 1800 rpm.

Extremely compact for its capacity, the new Twin Disc Power Take-Off is provided with an S.A.E. #0 flywheel housing. With triple driving plate construction, it assures ample friction surfaces to withstand high horsepower loads. And with solid driving plates, the new PTO effectively permits higher safe permissible speeds.

The pilot bearing of the new Power Take-Off is composed of a single row of balls, operating in bearing races of double-row width . . . providing improved accommodation of minor misalignment inherent in installations of this nature. Pilot bearings of this type provide additional space for lubricant, which is more effectively retained by the double grease shield construction. Although this construction is usually referred to as "sealed for life," the clutch shaft is drilled to provide for relubrication of the pilot bearing in the usual manner.

Another outstanding feature of the new Twin Disc Power Take-Off is the use of a spherical bearing which does not require adjustment. With its inherent ability to permit angularity, the spherical bearing is more resistant to overload and destructive forces resulting from heavy side loads.

For complete information on the new Twin Disc SP-318 Friction Power Take-Off (and the SP-314, a smaller model of the same new design, for engines in the 225 hp range operating at 2200 rpm), write to the Twin Disc Clutch Company, Racine, Wisconsin.

TWIN DISC
CLUTCHES AND HYDRAULIC DRIVES

TWIN DISC

Friction Clutches and Fluid Drives

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin
Hydraulic Division, Rockford, Illinois

There's an EX-CELL-O

Precision Spindle

BUILT ESPECIALLY FOR YOUR WORK



Single-body, belt-driven internal grinding spindle.



25 hp heavy duty precision spindle with 24" grinding wheel.



25,000 rpm high frequency inbuilt motor spindle.



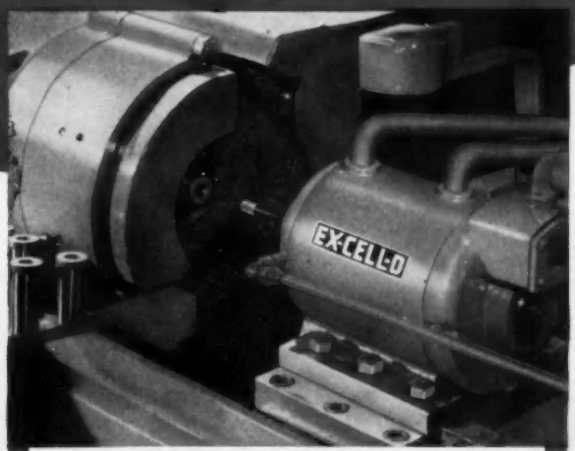
Precision inbuilt motor spindle for cutter grinder.



Totally enclosed inbuilt motor surface grinder spindle.



Heavy duty motorized precision spindle available up to 20 hp.



EX-CELL-O High-frequency Spindle, rated at 40,000 rpm, grinds small holes in bushings.

XLO

EX-CELL-O for PRECISION

For production grinding to precision limits "just any spindle" won't do. It must be carefully selected to suit the work. From Ex-Cell-O's widely-varied line of precision spindles you can select a standard model, or we'll make one special to your requirements. These spindles have long been the original equipment choice of leading manufacturers.

Features of the line include:

Rigidity
Permanent adjustment
No vibration, no chatter
Precision ball bearings preloaded for predetermined speeds

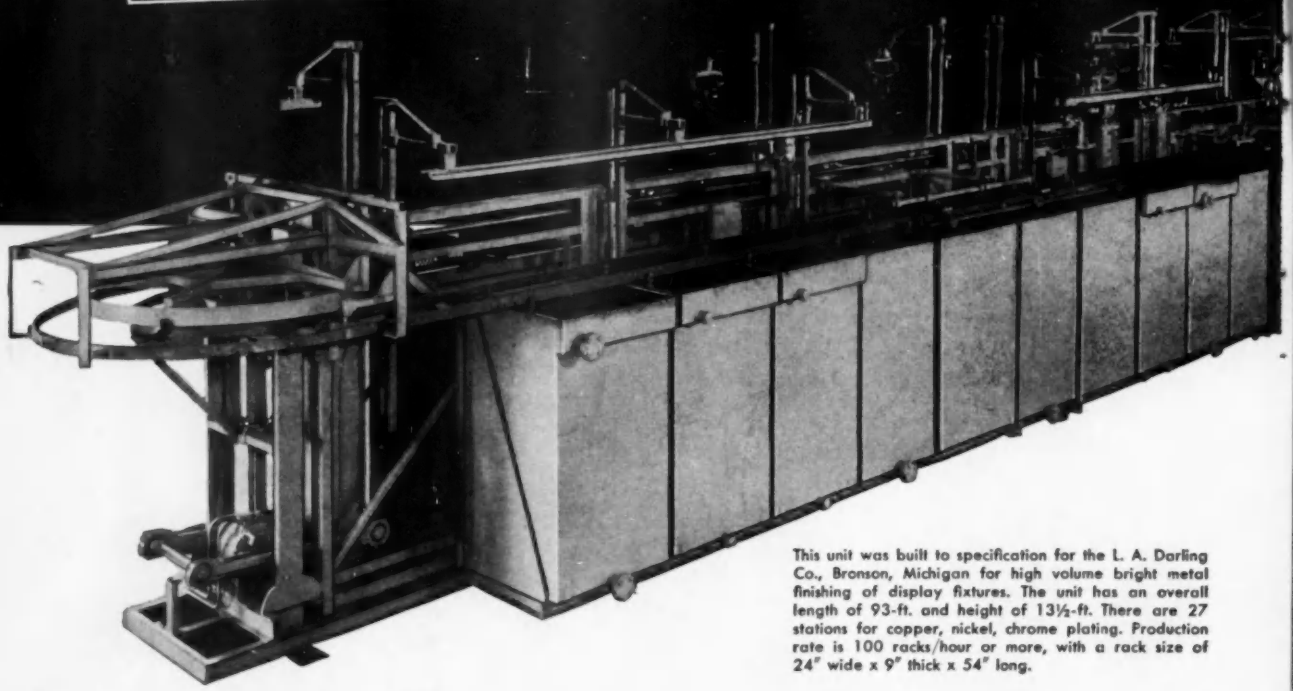
Phone your Ex-Cell-O representative, or phone or write Ex-Cell-O in Detroit, for CATALOG LISTING HUNDREDS OF STANDARD GRINDING SPINDLES

MANUFACTURERS OF PRECISION MACHINE TOOLS • GRINDING SPINDLES • CUTTING TOOLS • RAILROAD PINS AND BUSHINGS DRILL JIG BUSHINGS • AIRCRAFT AND MISCELLANEOUS PRODUCTION PARTS • DAIRY EQUIPMENT

EX-CELL-O
CORPORATION
DETROIT 32, MICHIGAN

56-32

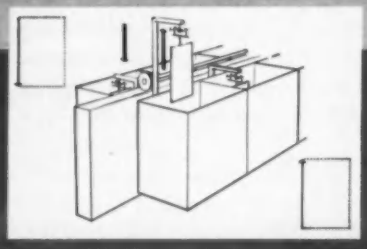
ONLY Wagner BROTHERS CAN OFFER YOU THIS . .



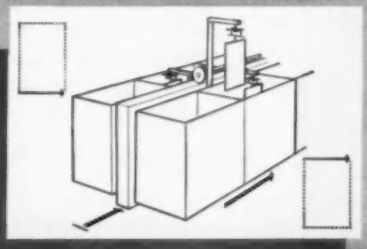
This unit was built to specification for the L. A. Darling Co., Bronson, Michigan for high volume bright metal finishing of display fixtures. The unit has an overall length of 93-ft. and height of 13½-ft. There are 27 stations for copper, nickel, chrome plating. Production rate is 100 racks/hour or more, with a rack size of 24" wide x 9" thick x 54" long.

Revolutionary Concept.....

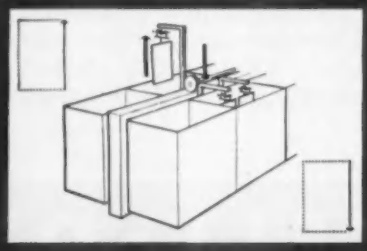
The Wagner Brothers Automatic is a complete and fully automatic mechanism, incorporating a revolutionary vertical transfer and return type work conveying principle which eliminates elevating superstructure, transfer cams, chains and sprockets and hydraulic cylinders above tanks. Many unique design features combine to make this mechanism a smooth operating, perfectly timed unit requiring less than ½ the power of comparably sized units.



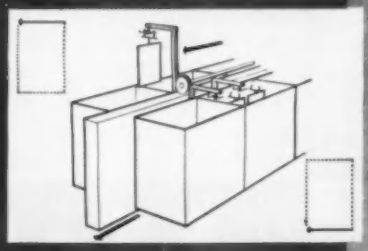
FIRST VERTICAL MOTION



FIRST HORIZONTAL MOTION



SECOND VERTICAL MOTION

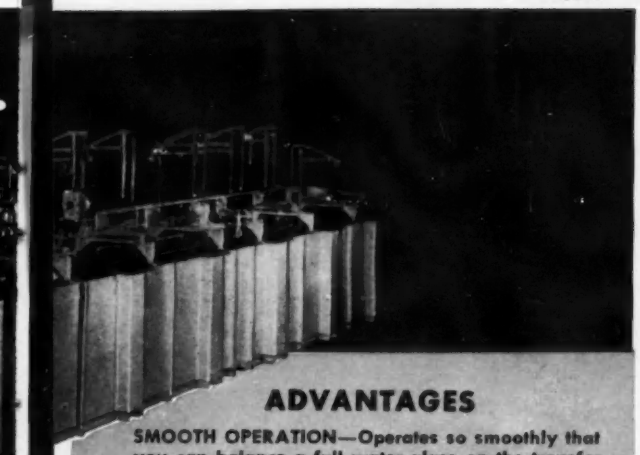


SECOND HORIZONTAL MOTION

HOW IT WORKS

All transfer and conveying mechanism is mounted on a reciprocating carriage located between the two rows of tanks. Two basic movements are used to bring parts through the full plating cycle; one forward and reverse straight line horizontal motion and one raising and lowering vertical movement.

Plating racks are attached to work-carriers at the loading station. When the machine is started, lifting arms fixed to the carriage engage the work-carriers being transferred and lift them at all transfer points on one side of the machine, carry them forward to the next station where they are lowered and disengaged from the lifting arm. This sequence is simultaneously produced in reverse on the opposite side so that, when the lifting arms are being lowered on one side, they are raised on the other side.



ADVANTAGES

SMOOTH OPERATION—Operates so smoothly that you can balance a full water glass on the transfer mechanism throughout the entire plating cycle. Obviously such smooth operation will save you time now spent salvaging parts from tanks, dropped there because of the jolting transfer action of ordinary machines.

LOW POWER REQUIREMENTS—Powered by one 10 hp motor, this installation uses less than half the power required by comparably-sized units.

MINIMUM OF MAINTENANCE—There are few moving parts to wear, no vibrating parts, no backlash in automation, nor little chance of misalignment. Overload protection is given by a by-pass in the hydraulic pump which prevents destructive jamming. All working parts can be reached for adjustment without disassembly. Maintenance is reduced to a fraction of that usually required.

..... IN PLATING AUTOMATION

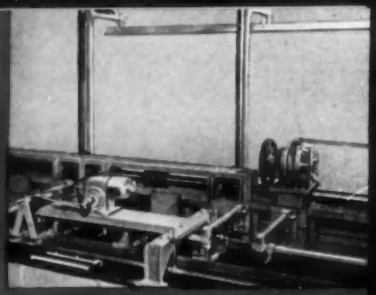
SIMPLE INSTALLATION—Your Wagner Brothers Automatic is delivered to you, either intact or in two or three completely assembled sections, depending upon size. Installation is simply a matter of positioning and leveling. You can imagine the savings in installation costs ordinarily required.

OTHER PLUS FEATURES—Wagner Brothers Automatics require a minimum of space. The model illustrated uses 54-inch racks and operates under a 13½-ft. ceiling. There are no greased parts or hydraulic fittings over tanks where dripping oil could contaminate solutions. Triple contacts on cathode bars afford consistent, uninterrupted current flow. Automatic heat control system gives simple, foolproof regulation of temperature for accurate results. Centralized lubrication can be provided as an optional feature. Drag and dwell times are easily varied with this unit.

In addition to high-volume plating, the Wagner Brothers' Automatic is equally well-suited to anodizing (sulphuric and chromic), phosphate coating, etching, electropolishing, oxide coating.

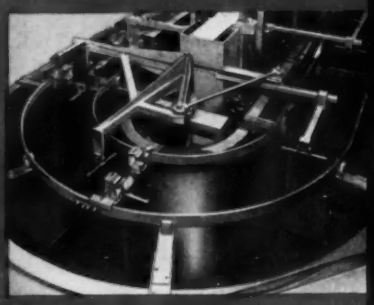
AGITATOR MECHANISM

Operating independently of the plating machine, a speed reducer furnishes agitation for the nickel plating tank at the rate of 10 to 14 ft./min., with a 3-inch stroke.



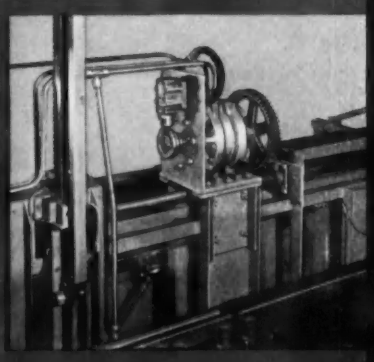
END TANK PUSHER ARM ASSEMBLY

Work-carriers, sliding on two electrified rails, are pushed around the end tank by a circular pushing arm and linkage arrangement to a point where they are again engaged by the lifting arms of the carriage to complete the plating cycle.



HYDROMOTORS FOR VERTICAL MOTION

Vertical motions are imparted to the work lifting arms by the two hydromotors mounted on the carriage, connected by rack and pinion gearing by a shaft running the length of the machine. Timing is effectively controlled by the eccentric arrangement on the one hydromotor, causing the arms on one side of the machine to rise while those on the other side are lowered.



HYDROMOTOR FOR HORIZONTAL MOTION

The transfer carriage, suspended on rollers moving over an oil-filled channel track, is actuated by this single hydromotor mounted at the base of the machine. Fitted with a crank and link, the hydromotor translates the simple harmonic motion of the motor shaft to the in-line reciprocating motion of the carriage. Note the convenient, easily accessible grouping of limit switches on the frame. Only four are required for the entire machine.



semi-automatics • precision hard chrome units • plating barrels • tanks and linings filters • rectifiers • anodes solutions • supplies.

YOUR *PRIMARY* SOURCE FOR PLATING AND POLISHING EQUIPMENT AND SUPPLIES

Wagner BROTHERS, INC.

400 MIDLAND AVE. • DETROIT 3, MICHIGAN

CHICAGO • ROCHESTER • CLEVELAND • CINCINNATI

ST. LOUIS • INDIANAPOLIS • NEW YORK

WAGNER BROTHERS, INC., 437 Midland Ave., Detroit, Mich.

☐ Please send information describing Wagner Brothers Automatics ☐ Please send name of representative

Name_____ Title_____

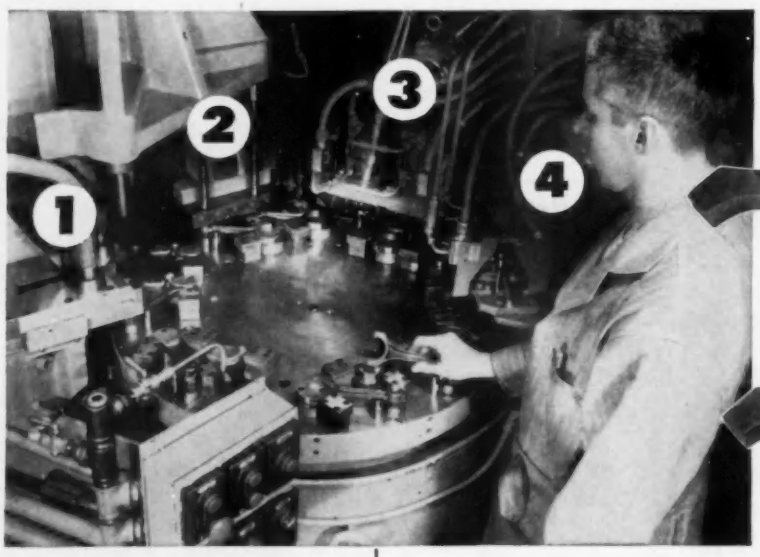
Company_____

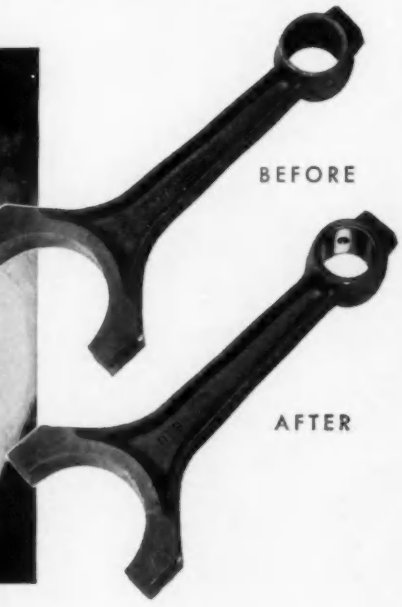
Street_____

City _____ Zone____ State_____

4 ANOTHER *American* FIRST

operations on 720 connecting rods per hour



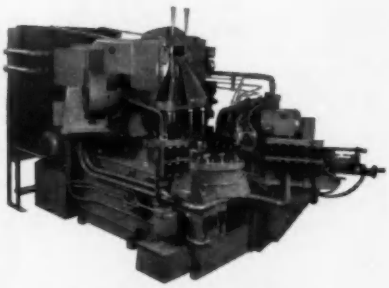


1	**ASSEMBLE WRIST PIN BUSHING**	**3**	**SPOT DRILL 1/8" OIL HOLE**
2	**BURNISH BUSHING I. D.**	**4**	**FINISH DRILL OIL HOLE**

Equipped with six, two-station locating fixtures, mounted on a rotating index base, this American machine does four operations at the rate of 720 pieces per hour (approximate at 100% efficiency).

At the first station, bushings are pressed into the wrist pin holes of the automotive connecting rods. At the next station, two American HSS burnishing tools burnish the holes and seat the bushings. The base then indexes the parts into position for two consecutive, horizontal drilling units. The first moves in to spot drill an oil hole and the second unit finish drills the hole through one wall. Operator unloads and reloads two parts at a time at the leading station.

American engineering can help you devise new and better ways to machine assemble parts — to combine operations and cut production costs. You can enlist American's long experience in this type of machine building by 'phone — or writing us details of your requirements. Why not do it today?



Note hopper feed and fully automatic push-button control.



Write for this new manual of broaching and machine assembly. Ask for Catalog 450.

AMERICAN *American* BROACH & MACHINE CO.

A DIVISION OF SUNDSTRAND MACHINE TOOL CO.

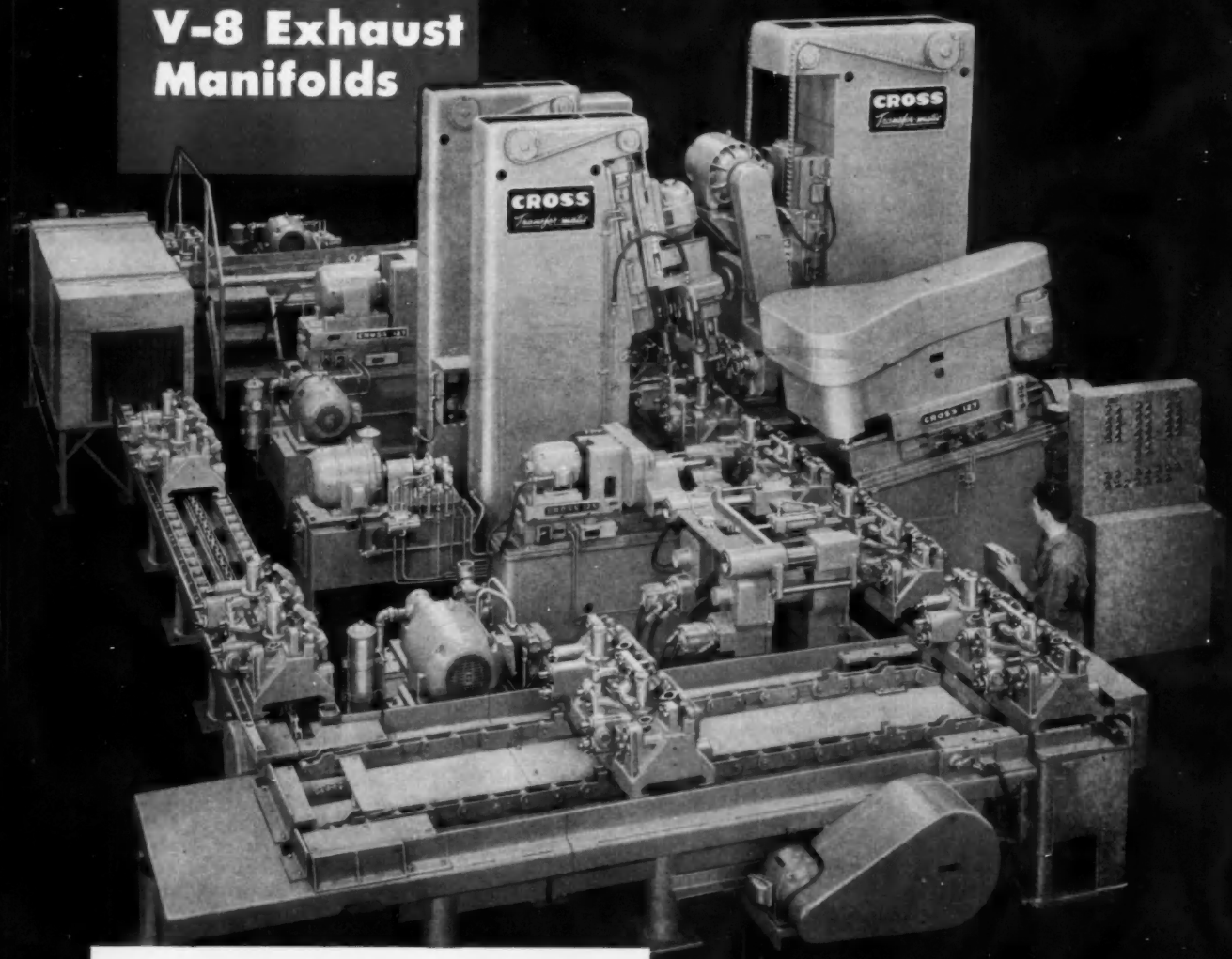
ANN ARBOR, MICHIGAN

SUNDSTRAND

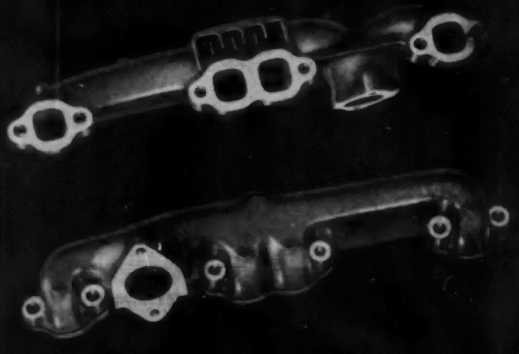
See *American* First — for the Best in Broaching Tools, Broaching Machines, Special Machinery

Completely Machines V-8 Exhaust Manifolds

Another Transfer-matic by Cross



- ★ 51 operations: 8 milling; 37 drilling, chamfering and spotfacing; and 6 tapping.
- ★ Palletized work holding fixtures for holding one right hand and one left hand part.
- ★ Automatic power wrench for operating work holding fixtures.
- ★ Automatic transfer mechanism.
- ★ All parts in Cross machines—even tooling details—are made to interchangeable tolerances for fast, easy maintenance.
- ★ Other features: Construction to JIC standards; hardened and ground ways; hydraulic feed and rapid traverse for milling, drilling and boring; individual lead screw feed for tapping.



Established 1898

THE CROSS CO.

First in Automation

DETROIT 7, MICHIGAN

NEW PRODUCTION and PLANT EQUIPMENT

FOR ADDITIONAL INFORMATION, please use reply card on PAGE 371

Feeds Bars in Cutting-Off Machine



Feeder for automatically handling random lengths of tubing and bar stock in cutting-off machine

DESIGNED for use with the Modern cutting-off machine, this new bar feeder handles random lengths of tubing and bar stock automatically, feeding the entire stock load to the machine without operator attention. Remnants of each bar or tube are automatically ejected and the end of each new bar is automatically trimmed and chamfered.

The feeder has a hopper for use with lighter wall tubing. It holds about 100 pieces of 2¾ in. OD or equal bulk of other sizes. An inclined table is used for bar stock or heavy tubing. Where both light wall tubing and heavy bars are used, the feeder may be equipped with both hopper and inclined table.

For small diameters and light wall tubing a vee trough is used. For large stock there are rollers on which the stock rotates while cutting-off, and lifting rollers for the stock while being fed through the spindle. The bar stock is fed through the spindle by the feed rolls on the machine, and as it nears the rear of the spindle the feeder loads a new bar into the feed trough or rollers. This new bar, as it automatically moves forward, acts as a pusher for the stock left in the spindle. When the old bar reaches the collet the stock stop moves out of the way and the remnant end is ejected.

The only adjustment is for different stock diameters, and this only requires turning a crank until the desired diameter shows on a graduated scale. Feeders are available for any maximum length bars, and in sizes to fit every model of the machine. Simplified feeders for a single diameter stock can be furnished. *Modern Machine Tool Co.*

Circle 40 on postcard for more data

Power Wrench

FOR use with various types of machine tools, a two-speed, fully automatic power wrench with controlled torque has been introduced. It is synchronized with the machine cycle to give automatic engaging and disengaging of parts, and operates on conventional machine tool principles —with high speed, low torque approach; low speed, high torque clamping; and high speed, low torque return.



LaSalle power wrench

The unit features a fluid motor drive which is said to facilitate the clamping of light parts or parts with thin-walled areas without danger of fracture. The clamping torque can be repeated from cycle to cycle within 10 per cent. Operations, such as loading, the work cycle, gaging, indexing and unloading, and including power clamping and unclamping, are performed automatically.

Two standard sizes are available—a smaller model with a torque capacity of from 0 to 800 in./lb; and a large model with a torque range of from 800 to 5000 in./lb. To regulate and control the wrench a hydraulic power package with positive controls is furnished. *LaSalle Tool Inc.*

Circle 41 on postcard for more data

Heat Distortion Tester

FIVE specimens, regardless of differences or similarity, may be tested at the same time by a new five gang heat distortion tester recently introduced. Complete within itself, each of the five units includes an automatic deformation indicator, thermometer, pilot light, automatic heating controls and a cooling system. Temperature increases from 24 deg C at 2 deg C per minute can be obtained through use of the automatic heating controls.

Each unit of this tester will accommodate specimens from ⅛ by ½ in. to ½ by ½ in. Fiber stress of 66 psi or 264 psi may be applied to the samples which are subjected to center loading transverse stress. *Tinius Olsen Testing Machine Co.*

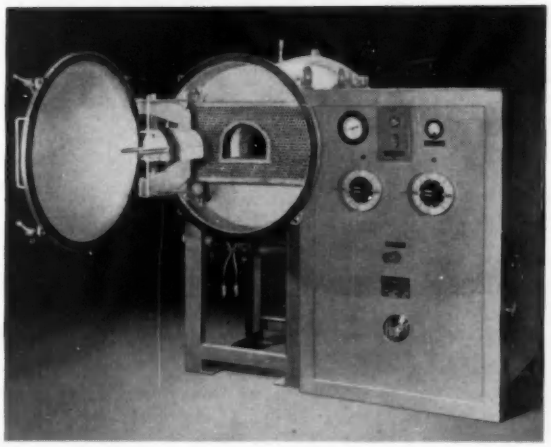
Circle 42 on postcard for more data

High Temperature Vacuum Furnace for Small Production

DESIGNED primarily as a research or small production furnace for heating ceramic and metallic parts in a vacuum of 200 to 300 microns at temperatures up to 2500 F, the furnace illustrated has a D-shaped muffle with a chamber 7½ in. wide, 13 in. deep and 5 in. high. Heat is produced by resistance heating elements, which are placed around the muffle. Features of the new furnace are ability to obtain a high vacuum in a few minutes for firing material to be placed in a hot furnace and heated under a vacuum; ease of access to the furnace through the use of an easily-operated removable end bell and a hinged plug refractory door.

Units are available in larger sizes and with modifications for lower and higher temperatures for various processes. *Harper Electric Furnace Corp.*

Circle 43 on postcard for more data



Harper high-temperature vacuum furnace heats parts in a vacuum of 200 to 300 microns at temperatures up to 2500 F

Grinder Attachment

To provide accurate control for grinding close tolerance tapers, a Swivalign dual electric indicator for measuring swivel table adjustment has been developed. This device, applicable to Norton cylindrical and universal grinding machines, is said to simplify the adjustment of swivel tables to correct errors in grinding exact tapers or to eliminate taper in straight work.

It consists of one electrical pick-up unit with zero adjusting knob at each end of the swivel table and a two-channel amplifier having a pair of indicating meter elements reading on a common scale. Each meter needle responds to movements of only one of the pick-up elements. Connections are so arranged that both needles move in the same direction of rotation as the swiveling of the table. Thus if the table is swiveled clockwise (as viewed from above) the needles rotate clockwise and vice versa.

Divisions on the meter scale indicate directly taper changes in thousandths of an inch per foot of taper. Two ranges of readings, one for extremely accurate settings with graduations of 0.0001-in. per foot and the other 0.0005-in. per foot of taper change are provided. The desired range is obtained by a selector switch on the front of the instrument case. A conversion chart on the side of the instrument case gives taper foot values for corresponding micrometer readings of work diameters. *Norton Co.*

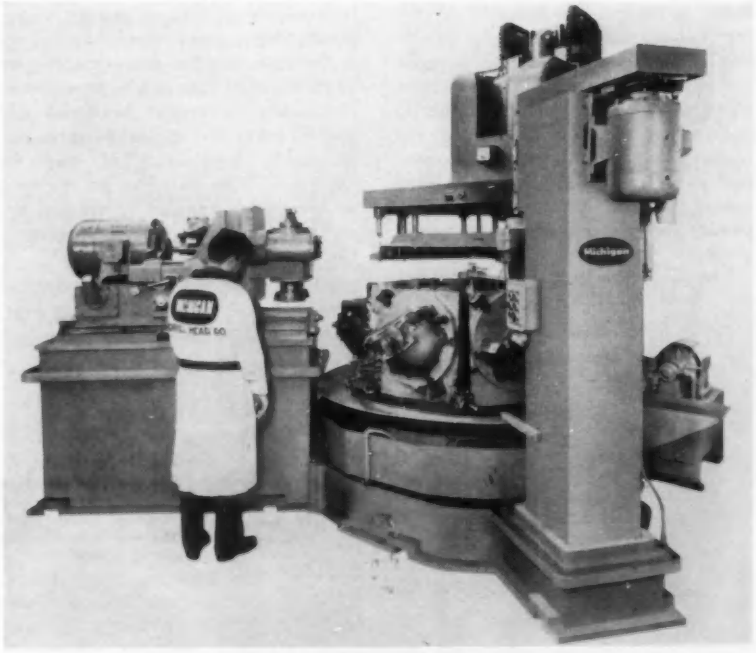
Circle 44 on postcard for more data

Milling, Drilling and Tapping Machine

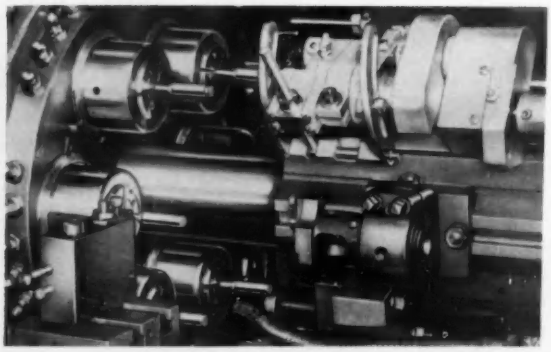
A SPECIAL three-way, horizontal and vertical, milling, drilling and tapping machine for handling large parts, has been unveiled. The three-position indexing fixture is mounted on a standard six-station automatic index table. This indexing fixture positions the part so that all machining operations are performed in either a vertical or a horizontal position, rather than an angular one. Power clamping is incorporated.

Emphasized is the feature that standard components are utilized, lending the machine to minor retooling for model changes. A standard horizontal way-type hydraulic feed unit is used for milling; a standard vertical way-type hydraulic feed unit for drilling and reaming; and a standard quill-type master lead screw unit for tapping operations. *Michigan Drill Head Co.*

Circle 45 on postcard for more data



This Michigan milling, drilling and tapping machine was tooled to handle 70 lb. transmission housings of a production rate of 50 per hour at 100 per cent efficiency



Turnmill attachment for milling slots, forms and flat sides on automatic screw machines.

Milling Attachment for Screw Machines

SECONDARY milling operations on standard automatic screw machines can be performed with the Turnmill, an attachment for multiple-spindled machines which permits the milling of any number of flats or slots while the part is turning in the spindle. It operates during the normal cycle of the machine, and advances with the end tool slide, or can be accelerated. The number of flats or slots milled is determined by cutter design. Attachments are available for every size and make of multiple-spindled automatic screw machine. Absolute concentricity is said to be assured to 0.0001-in. accuracy because the cutters rotate around the stock. *Turnmill, Inc.*

Circle 46 on postcard for more data

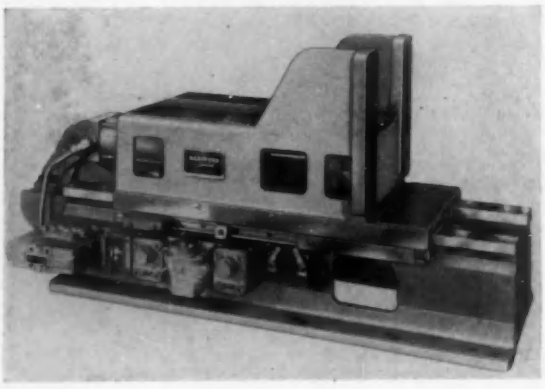
Hydraulic Feed Unit

THE model 405 way type hydraulic feed unit, designed to give balanced thrust, features thrust above the ways near the tool load. It is said to provide positive control of rapid traverse, fine feed and depth. Depth will repeat within 0.0005 in. The flange is designed to simplify mounting and aligning of multiple spindle heads, and the 15 in. stroke permits tool change clearance. In its position above the ways, the power cylinder is claimed to be more accessible for maintenance, and the hydraulic control panel can be mounted on either side of the unit. A separate floor-type power pack supplies the hydraulic power.

Thrust of the unit depends on hydraulic pressure. At 1000 psi the four-in. hydraulic cylinder provides 12,000 lb thrust. Feed rate is infinitely variable from 0 to 24 in. per minute, rapid advance is 8 in. per second and rapid return is 5 in. per second. Rapid advance and feed stroke lengths are adjustable to suit, by repositioning control dogs.

Multiple spindle drive motors up to 20 hp, 1800 rpm can be mounted on the saddle. Precision hardened and ground ways are standard equipment. Automatic lubrication of ways is available. The unit can be mounted in horizontal, angular or vertical positions. *Hartford Special Machinery Co.*

Circle 47 on postcard for more data



The Hartford way type hydraulic feed unit features thrust above the ways near the tool load

Tool Surfacer

TOOLS with surfaces able to withstand hard wear are said to be provided by three epoxy resins. The new formulations are die laminating resin 602, die surface casting resin 612-B, and die surface coat resin 613. The 602 epoxy was especially tailored to meet the need for a laminating resin in applications where extreme wear is anticipated, as in producing draw dies and other metal-forming tools, routing fixtures, and foundry dies. These materials permit the fabrication of tools and dies without application of heat, since they set at room temperature with the aid of an accelerator.

Resin 602, which can be stored unrefrigerated for long periods, combines with hardener 680 to provide a mixture of very low viscosity. It wets fibrous glass instantly to create a bond that will not delaminate. Tests of reinforced plastic tools made with laminates of this resin demonstrate dimensional stability and good chemical resistance among their many desirable characteristics.

The heavy consistency of coating resin 613 makes it spread evenly when brushed onto a mold, with the assurance that it will not run off vertical surfaces. This resin and casting resin 612-B both show a Rockwell M hardness of 98. *Marblette Corp.*

Circle 48 on postcard for more data

Cadmium Plating

THE Cadalume process for bright cadmium plating in still tanks is said to introduce a simple to operate, low-cost bath for producing bright, uniform cadmium deposits without bright dips. The brightener may be added directly to the bath, no break-in period is needed, and deposit brightness appears immediately. Although the deposit has brightness as deposited, on deeply recessed work a 1 per cent nitric acid bright dip may be used to brighten low current density areas.

Most conventional cadmium solutions, or a bright cadmium bath, can reportedly be converted to the process by adjusting the solution to given formulas, then adding the required amount of addition agent. It is suggested, however, that a sample solution be sent to the company's laboratory for conversion recommendations. *Hanson-Van Winkle-Munning Co.*

Circle 49 on postcard for more data

(*Turn to page* 502, *please*)

Free INFORMATION SERVICE

Use either of these postcards for Free Literature listed below, or for more information on New Production Equipment and New Products described in this issue.

USE THIS POSTCARD

FREE LITERATURE

Vertical Chucker 1

The Acme-Ryder vertical multiple-spindle hydraulic chucking automatic, an eight-spindle model equipped with 14-in. capacity chucks, is described in new booklet. *National Acme Co.*

Chemical Rubber 2

Eight-page booklet A-509 outlines the characteristics of Hypalon synthetic rubber. *Elastomers Div., E. I. du Pont de Nemours & Co.*

Busway System 3

A factory-assembled plug-in busway system permitting direct connection to bus bars for feeding lighting and power loads is presented in 20-page bulletin GEA-6470. *General Electric Co.*

Molybdenum Silicides 4

Two companion publications on molybdenum silicides have just been issued. Bulletin Cdb-6 is an eight-page bulletin entitled "Refractory Molybdenum Silicides"; CH-23 is a two-page bulletin entitled "Fabrication of Molybdenum Disilicide Parts." *Climax Molybdenum Co.*

Trouble-Shooting 5

"Trouble-shooting Chart for Hydraulic Systems" is the subject of a new wall chart designed to assist operators and maintenance men in locating and correcting common troubles. *Sun Oil Co.*

Abrasive Separators 6

The importance of proper blast cleaning abrasive separation is emphasized in eight-page bulletin 1003 recently issued. Four types of separators are described which handle from 33,000 to 320,000 lb/hr of abrasive. *Pangborn Corp.*

Deep Throat Presses 7

Specifications on new 22 to 150-ton capacity presses, featuring front-to-back crankshaft design and enclosed driving mechanism, are given in 26-page bulletin 61C. *Niagara Machine & Tool Works.*

Sulfur Analyzer 8

Bulletin LEP-1, describing a high frequency combustion unit for rapid determination of total sulfur in Diesel fuel, kerosene, oil sludges, lubricating oils, tars, spent caustics, catalysts and other inorganic materials, has been issued by *Laboratory Equipment Div., Lindberg Engineering Co.*

Static Control 9

Cypak static industrial control systems are discussed in new booklet B-6584 from the standpoints of the need for static controls, what they are, how they operate and where they can be used. Illustrated with photographs, drawings and circuit diagrams of actual equipment. *Westinghouse Electric Corp.*

(Please turn page)

VOID After May 15, 1956 3/15/56

Circle code numbers below for Free Literature, New Plant Equipment, or New Product Information

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

NAME ..... TITLE .....
(Please Print)

COMPANY OR BUSINESS .....

ADDRESS ..... (CITY) ..... (ZONE) ..... (STATE)

FIRST CLASS
Permit No. 36
(Sec. 34.9 P.L.&R.)
New York, N. Y.

BUSINESS REPLY CARD
No Postage Stamp Necessary If Mailed In the United States

POSTAGE WILL BE PAID BY

AUTOMOTIVE INDUSTRIES
P. O. Box 66,
Village Station,
New York 14, N. Y.

Readers Service Dept.

Magnetic Chucks 10

Rectangular, rotary, and sine angle magnetic chucks, and magnetic work drivers, as well as accessories, are the subject of 21-page catalog 412. *Taft-Peirce Manufacturing Co.*

Cast Iron Welding 11

A new, fully-illustrated, four-page booklet entitled "The Repair of Cast Iron Parts" and outlining latest information on the welding of cast iron with Ni-Rod and Ni-Rod 55, has recently been issued. *International Nickel Co., Inc.*

Die Springs 12

A 12-page brochure just issued, bulletin 72, describes the development of new line of die springs in three pressure groups and over 500 standard sizes. *E. W. Bliss Co.*

Aluminum 13

Up-to-date information on aluminum mill products and services is contained in a new 24-page booklet. The brochure offers data on aluminum alloys, forms, mechanical and physical properties, applications, fabricating and finishing techniques. *Kaiser Aluminum & Chemical Corp.*

Air Tools 14

Catalog 62, 40 pages, covers a wide range line of air tools, including grinders, sanders, polishers, wire brush tools, drills, nut-setters, impact wrenches and others, as well as data on air hoists and automatic drills. *Aro Equipment Corp.*

USE THIS POSTCARD

Fork Lift Trucks 15

Three four-page brochures covering an entire line of fork lift trucks, tractors and accessories have just been released. One folder gives standard specifications on all models; another, the standard accessories available; and the third folder, special-engineered accessories and equipment. *Towmotor Corp.*

Hydraulic Units 16

Quill type hydraulic power units and their use in step drilling, an automatic process for drilling deep holes, are covered in 20-page bulletin 45352. *Ex-Cell-O Corp.*

Bright Hardening 17

Heat Treat Review, Vol. 6, No. 3, features an application story on the bright hardening of stainless steel. It also contains an article on eight heat treat problems. *Surface Combustion Corp.*

Stainless Strip 18

Technical information on 20 types of stainless strip steel is contained in a 32-page brochure. *Superior Steel Corp.*

Heat Exchangers 19

Data on the use of aluminum in heat exchangers is presented in a new 16-page brochure. *Reynolds Metals Co.*

Lubrication Pumps 20

Compact, cartridge-type lubrication pumps, models LF and LFD for non-directional service, and models RF and RFD with automatic reversing feature, ranging in capacities from 55 to 170 gph, are shown in leaflet 108. *Tuthill Pump Co.*

Aluminum Brazing

Practical shop data and recent developments in the art of brazing aluminum are presented in a new book, "Brazing Alcoa Aluminum." Write on company letterhead to *Aluminum Co. of America, 774 Alcoa Bldg., Pittsburgh 19, Pa.*

Solvent Detergents

The cleaning uses and abilities of solvent detergents are described in a 16-page booklet, which tells how solvent detergents, used without heat, remove oily films, smuts, cutting, drawing and stamping compounds, zinc chromate primers from aluminum, and synthetic paints from steel, while providing temporary protection against rust after painting. Write on company letterhead to *Oakite Products, Inc., 128A Rector St., New York 6, N. Y.*

(*Turn to page* 386, *please*)

FIRST CLASS
Permit No. 36
(Sec. 34.9 P.L.&R.)
New York, N. Y.

BUSINESS REPLY CARD
No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY

AUTOMOTIVE INDUSTRIES
P. O. Box 66,
Village Station,
New York 14, N. Y.

Readers Service Dept.

VOID After May 15, 1956 **3/15/56**

Circle code numbers below for Free Literature, New Plant Equipment, or New Product Information

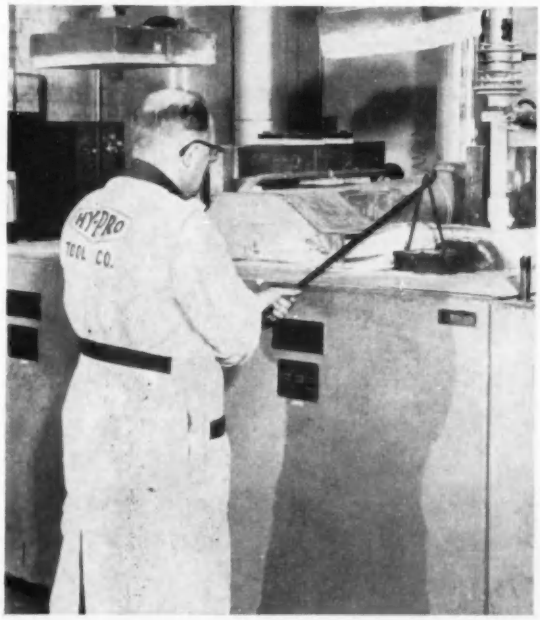
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

NAME ..... TITLE .....
(Please Print)

COMPANY OR BUSINESS .....

ADDRESS ..... (No. & STREET) (CITY) (ZONE) (STATE)

HY-PRO REVOLUTIONIZES TAP PRODUCTION WITH EXCLUSIVE 3-WAY QUALITY CONTROL



1. Heat-Treating—Hy-Pro's new heat treating installation—the industry's most advanced equipment—guarantees you the hardest, toughest taps yet achieved with unvarying perfection.



2. Electronic Analyzer—When a Hy-Pro tap is put in this machine, its structure must conform to the most rigid Hy-Pro standards—or it is electronically rejected. *All* Hy-Pro taps are subjected to electronic analysis.

Read how the Tap Specialists have raised the highest standards in the industry still higher

Now, Hy-Pro—the tap specialists and traditional leaders in tap quality—have developed a new and *exclusive* 3-way quality control. Here are the three steps:

The first is the industry's most advanced Heat-Treating installation, which guarantees you the hardest, toughest taps.

The second Hy-Pro marvel is its new Electronic Analyzer, which examines the structure of a tap without ever touching it. That's why Hy-Pro taps can produce more holes per tap at the lowest cost per tapped hole.

The third installation is Hy-Pro's new Micro-Hardness Tester. Hy-Pro taps are microscopically examined for metallurgical uniformity on both interior sections and surfaces.

And you get the benefit of these new Hy-Pro developments at no extra cost to you. Get in touch with your nearest Hy-Pro distributor, or call us direct. Hy-Pro costs no more.



3. Micro-Hardness Tester—Hy-Pro taps undergo the only known microscopic examinations of metallurgical structure on both interior sections and top surfaces. Even the extreme cutting edges are checked to within one-half of one thousandth of an inch.

REG. U.S. PAT. OFF.

HY-PRO

"The Tap Specialists"

New Bedford, Massachusetts, U. S. A.

ADDITIONAL WAREHOUSES:

10428 W. McNICHOLS RD.
DETROIT 21, MICH.
UNIVERSITY 4-1077

11232 LAWLER ST. (WORTH)
CHICAGO, ILL.
GARDEN 4-0217

109 EDISON PL.
NEWARK 5, N. J.
MARKET 2-4318

NEW PRODUCTS AUTOMOTIVE-AVIATION

FOR ADDITIONAL INFORMATION, please use reply card on PAGE 371

Fluid Coupling

Overload protection, high power factor, and smooth positive acceleration are features of the Red Seal hydraulic coupling just announced. The



new coupling was designed to cushion engine and equipment from shocks of sudden load applications. It was developed for use on compressors, conveyors, blowers, cranes, crushers, pumps, winches, road equipment and other industrial applications. *Continental Motors Corp.*

Circle 70 on postcard for more data

Ignition Analyzer

An electronic instrument, resembling a portable television receiver, for visually indicating engine operation, will be marketed nationally. Called the type 901 TV-type engine analyzer, it is connected to the ignition system of the engine by two clip-on leads. Engine troubles show up on the device's picture tube in the form of patterns of light. As an aid in interpreting the patterns which appear, a booklet has been compiled listing numerous engine faults and showing the pattern caused by each.

The analyzer, which weighs less than 60 lb and is approximately the size of a suitcase, gives simultaneous pictures of the behavior of each cylinder in an operating engine. It is said to detect nearly all ignition troubles, including fouled, misfiring, open or shorted sparkplugs; defective coils, condensers, wiring and switches; and worn distributor cam and shaft bearings. The instrument may also be used to check ignition timing and operation of intake and exhaust valves, as well as pre-ignition conditions.

The unit is usable either with 117-v ac source, or receive its power from the battery of the car being tested. The latter feature permits testing of the car on the road. *Allen B. Du Mont Laboratories, Inc.*

Circle 71 on postcard for more data

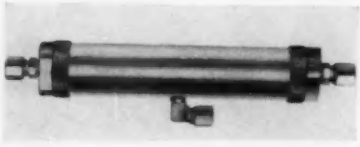
Slide Rules

Light-alloy slide rules made in green-yellow shade are said to cut eyestrain, blurring and errors in reading calibrations. Non-corrosive, non-rusting metal construction eliminates warping, swelling and binding. Now made in 6 and 10-in. trig, log-log standard rules, or in rules made to special order. *Pickett and Eckel, Inc.*

Circle 72 on postcard for more data

Safety Brake

Recently announced is a device claimed to assure positive braking power under conditions when regular hydraulic systems fail. According to the manufacturer it operates when any unequalization occurs in the braking system either a slow leak in the lines or at the wheels, or a direct

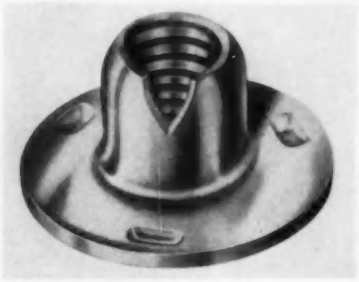


break in the lines. When this or any other damage to the braking system occurs the unit functions by dividing the brake system into two sections. The damaged section is sealed off leaving the other section in working condition thus assuring either front or rear wheel brakes. *Safety Brake Corp.*

Circle 73 on postcard for more data

Self-Locking Nut

The upper portion of the recently-announced Teenut incorporates a V-type notch, with the circumference of the barrel compressed inwardly toward the axis to form a permanent



set. This makes it a re-usable, prevailing-torque-type, self-locking nut. It is a one-piece, self-contained unit. No non-metallic materials or stamped parts are used. As the V-block does not rely on base load to obtain its friction grip, it may also be used as a stop nut. (Indentations in base flange are welding bosses).

They can be engineered in various shapes and sizes, materials, screw threads, and finishes. *Carr Fastener Co.*

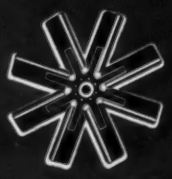
Circle 74 on postcard for more data

Nylon Balls

Precision balls made of type FM-10001 nylon are now available from stock in 14 standard sizes from ⅛ to ¾-in. diam. Other sizes can also be supplied, on special order. These balls are light in weight, resist corrosion and wear, give quiet operation, and are said to be accurate to plus-or-minus 0.002-in. on diameter and 0.001-in. on sphericity. Typical applications include use in bearings, pumps, check valves and instruments. Specifications, sizes and prices for standard balls in quantities of 1000 to 100,000 are given in a price list, available on request from *Industrial Tectonics, Inc.*

Circle 75 on postcard for more data

(*Turn to page 376, please*)



Fans



Turbochargers



Dampers



Superchargers



Water Pumps



Oil Pumps

Specialists for over 37 Years in

FLUID FLOW and VIBRATION DAMPING PRODUCTS

Schwitzer has extensive Research and Engineering facilities and experienced technicians to develop an economical product—for the Flow of Air, Oil, Water and other Fluids—or the Isolation or Elimination of Vibration in your equipment, whether it is in the Automotive, Atomic, Aircraft, Agricultural, Earth Moving, or other fields.

Schwitzer utilizes the most modern production facilities for the Fabrication, Assembly and Testing of these Precision Products—for high or low volume production.

These services are available to you for product development applications in many diversified fields.

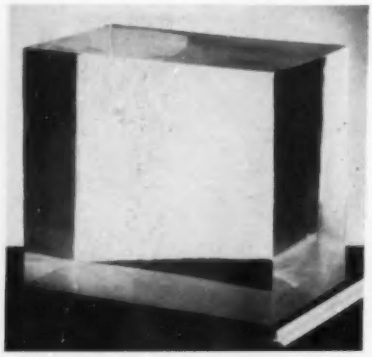
SCHWITZER

CORPORATION

INDIANAPOLIS, INDIANA

Acrylic Sheet

Extra-thick cast acrylic sheet, 5 in. to 10 in. in thickness, is now manufactured. The new heavy sheet is said to be perfectly clear with no flaws or



bubbles. It eliminates the necessity for laminating to obtain the desired thickness for many applications, and is available in 24 in. by 24 in. sheets. Possible uses in optical and scale models and prototypes, observation shields, pressure vessels, insulators, and three-dimensional displays are among those suggested by the maker. *Cadillac Plastic and Chemical Co.*

Circle 76 on postcard for more data

Recording Paper

Lino-Writ-2 is a new medium-speed photographic recording paper. Featuring excellent blacks and whites, it is supplied in splice-free rolls up to and including 400-ft lengths; and is available in the same sizes and types as is high speed and regular Lino-Writ recording papers.

Lino-Writ-2 Type W, a thin 100-pct rag stock, will allow oscillographic recording machines using, for example, 125-ft rolls of ordinary paper to accept 200 ft of type W paper. Whereas ordinary cellulose paper breaks after approximately 50 flexings, type W will withstand 300 flexings. *E. I. du Pont de Nemours and Co.*

Circle 77 on postcard for more data

Rubber Fiber

VULCANIZED fiber incorporating an oil resistant synthetic rubber sizing, type RS-10H, shows promise as a packing and facing material, and as a possible substitute for rubber coate dpaper. It has a friction coefficient 30 to 50 per cent higher than that of standard vulcanized fiber and improved chemical resistance. Hycar type synthetic rubber used can be precipitated directly on paper fibers. Uniform dispersion of Hycar throughout the vulcanized fiber makes this material particularly suited for abrasion-resistant uses.

Compared to vulcanized fiber, rubber sized fiber is about 70 per cent more compressible and 69 per cent more resilient. Both its fiber and rubber components, moreover, are not affected appreciably by oil. It is now supplied in thicknesses from 0.015 in. to ⅜-in. inclusive. *National Vulcanized Fibre Co.*

Circle 78 on postcard for more data

Fuel Primer

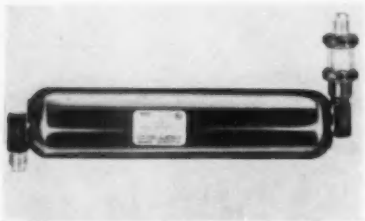
A hot fuel prime system is now in production. It consists of three units, a relay box, a tank assembly within which the fuel is heated and a heater relay. The complete system weighs a total of 8.82 lb, mounts forward of the firewall in the engine enclosure, and is for ac or dc power supply.

The system is used with or without the deaerating cold weather oil system. It is applicable to all piston type aircraft engines whether airframe mounted or installed in ground units. The system pre-heats the fuel before it reaches the engine by the use of a resistance type heating element enclosed in the tank. This heating operation will reportedly raise the temperature of the fuel from a low of —65F to a firing condition of 220F in two minutes. *United Aircraft Products, Inc.*

Circle 79 on postcard for more data

Receiver Combination

A standard line of receiver-filter-drier-liquid indicator combinations has been introduced for automotive and commercial air conditioning applications. The filter-drier end consists of



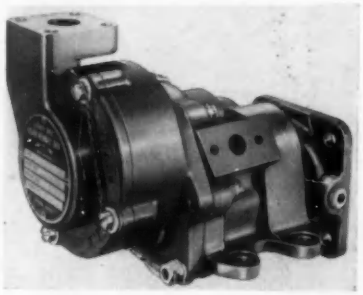
the Super-Flo, which combines a fiberglas depth filter and a molded drying element. The liquid indicator used is the E-Z-See, hermetically sealed to prevent possible leaks in the system. Both are Underwriters' Laboratories approved. *Remco, Inc.*

Circle 80 on postcard for more data

Fuel Pump

Designed for gas turbine fuel system, the model RR-15460 high pressure fuel pump, rotary gear, positive displacement, has a built-in centrifugal fuel booster pump and mounting pad for gear driven fuel meter control. Rated capacity is 9.4 gpm at 6000 rpm and 700 psi abs discharge pressure pumping MIL-F-5624, grade JP-4 fuel at 110F with 20 psig inlet pressure derived from the booster pump. Power requirement is 8.0 hp at rated capacity. Displacement of gear pump is 0.52 cu in. per revolution.

It has a square, four-hole mounting flange and spline drive shaft. Me-



chanical shaft seal is flexible type, self-aligning for shaft misalignment. Pump gears and bearings are designed for high speed of gas turbine pump drive. Aluminum pump body contains inlet port, discharge port and port for relief valve return line. The relief valve and fuel meter control are not supplied with the pump. *Lear-Romec Div., Lear, Inc.*

Circle 81 on postcard for more data

Freon Coupling

Self-sealing coupling, No. 511017, designed for use with Freon 12 and Freon 22, has been developed. It is available in ¼ through 1½ in. sizes, and is said to provide a positive, leakproof seal, without inclusion of air upon disconnection or connection.

In one type of application, condenser and evaporator units and their connecting tubing in various lengths are precharged with Freon at the factory, sealed with these coupling halves and shipped completely precharged. When the units are set in place in a purchaser's building, the lines are connected by mating the proper coupling halves, and the system is then ready for operation. *Aeroquip Corp.*

Circle 82 on postcard for more data

(*Turn to page* 510, *please*)

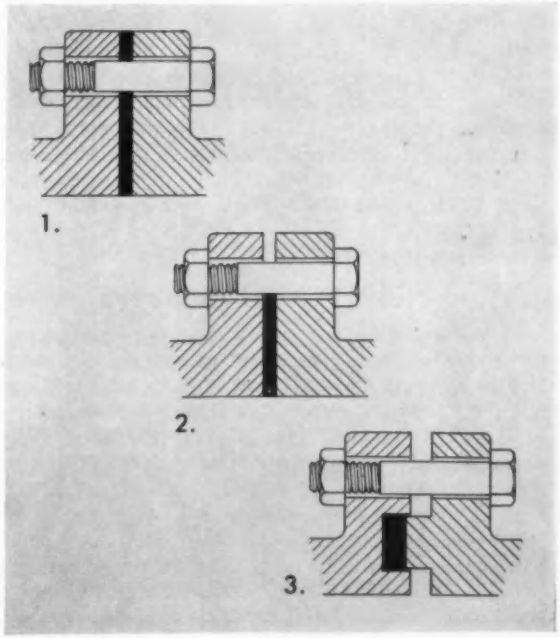
How to select gasket materials for use in basic joints

Many factors affect the choice of a gasket material. Cost, temperature involved, fluid action, flange surface characteristics, unit load or compression, and internal pressure, all must be considered. However, the first question to be answered is, "What general type of material is suitable in this particular flange?"

common flange joints

A simple flange (Fig. 1) may be sealed with nearly any kind of flat gasket, plain or jacketed. Ordinarily, however, fiber sheet, cork composition, cork-and-rubber, and similar materials are best. Straight rubber, on the other hand, tends to extrude from such a joint under medium to high flange pressures.

By reducing the gasket wall section of the simple flange (Fig. 2), a higher load is placed on the gasket without changing the bolt pressure. The flange will thus retain

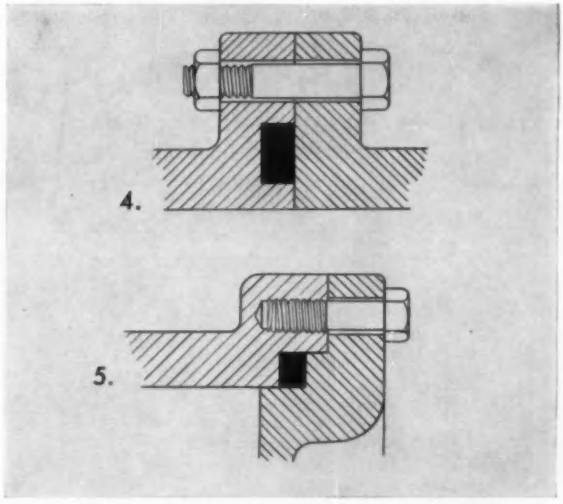


higher internal pressures—and gasket cost may be reduced. Again, nearly any type of flat gasket is suitable, but in this case the tendency of rubber to extrude is emphasized by the increased unit loading.

A further variation of the common flange joint is the tongue-and-groove (Fig. 3), used where extremely high pressures on the gasket are needed to retain high internal pressures. It, too, may be sealed by nearly any type of flat gasket. Here, the incompressibility of straight rubber is not a problem because the gasket is completely confined. Since rubber will deform but not compress, however, a rubber gasket should be cut so that it does not fill the channel and prevent the tongue from entering the groove.

metal-to-metal joints

In metal-to-metal joints (Figures 4 and 5), rectangular-section rubber gaskets may be used effectively if their



volumes and shapes are correct. That is, gasket volume cannot exceed the volume of the cavity or the joint will not close. At the same time, the shape of the gasket must permit about 25 per cent deflection of the gasket when the joint is closed. When very close gasket tolerances are impractical, the gasket can be cut larger than the cavity if relief for sideflow is provided in the joint design.

A simpler solution to gasketing a metal-to-metal joint, however, is to use truly compressible materials such as cork composition or cork-and-rubber. With these materials, gasket volume and shape are not critical. Cork composition, for instance, can be cut to full channel width and twice the depth, yet it will compress into the cavity and permit perfect mating of the metal surfaces. Cork-and-rubber materials also combine the advantage of compressibility with the sealing properties of synthetic rubber.

You'll find other useful information on the design and use of gaskets in the new Armstrong Gasket Design Manual. Write for your copy of this manual to Armstrong Cork Company, Industrial Division, 7103 Imperial Ave., Lancaster, Pennsylvania.



Armstrong

GASKET MATERIALS

. . . used wherever performance counts

AIR BRIEFS

By RALPH H. McCLARREN

Giant Test Facility Revealed

A $5,000,000 production test facility was recently unveiled by AiResearch division of the Garrett Corp. Located on a 10 acre plot, the test buildings house 90,000 sq ft of working area.

Products which can be tested on a production basis include gas turbine engines, air turbines, air starters, pneumatic controls, pressure regulators, valves, refrigeration turbines, heat transfer equipment, and complete systems using such component items.

To meet the requirements of modern jet aircraft and withstand ultra high speeds and altitudes, provisions at the testing facility provide for extreme ranges in temperature and atmospheric conditions. Test cells can be operated from minus 80 F up to 1000 F, and altitudes up to 75,000 ft can be simulated.

Plastic Material Aids Stress Determination

"Fosterite," a plastic developed in 1947, is being used by the U. S. Navy's Bureau of ships to speed up the photoelastic method of analyzing stresses in structures. Study models can be cast 10 to 20 times larger with Fosterite than with usual photoelastic plastics which allows many more stress lines to be apparent in the testing procedure.

Spark Plugs Preserved By Coated Paper

An improved protection of aircraft engine spark plugs has been undergoing tests by the Bureau of Aeronautics, Navy Department. Paper impregnated with a vapor corrosion inhibitor inserted in the barrel of the spark plug has proved advantageous over the oily preservatives currently used. No preliminary cleaning or testing is required prior to installation. Plugs preserved by VCI paper are now being delivered to operating activities.

Helicopter Used As Crane

No crane was available at Barksdale Air Force Base in Shreveport, La., to hoist a 1250 lb radar pedestal to the top of a 125 ft tower. A helicopter from Fort Hood, Texas, came to the rescue. The radar unit was fastened by sling to the 'copter, raised a few feet while mechanics unfastened the wood shipping base and then flew it to the top of the tower. Assisted by an observer using the intercom, the pilot lowered the equipment gently into place. It proved to be a fast operation and saved money.

The pedestal was part of a Raytheon AN/CPS-9 weather radar used to locate storms as far away as 300 miles. It provides detailed information on the size, intensity, type of precipitation, direction of movement, height and other data on storms.

National Turbine-Powered Air Transportation Meeting

Extra significance is placed this year on the Turbine-Power meeting scheduled to be held in San Diego, Calif., August 15, 16 and 17. Large orders placed by the airlines for jet powered transport aircraft emphasize the national and international importance of the subject. Meetings will be sponsored and arranged by the San Diego Section of the Institute of the Aeronautical Sciences. Earl R. Hinz is the general chairman. Address: 3380 North Harbor Drive, San Diego 1, Calif.

Airline Pilots Fly Jet Bombers

To show and indoctrinate airline personnel in the difference between operation of piston engine aircraft and jet aircraft, the U. S. Air Force has made a special indoctrination course available to representatives of the U. S. Airlines. Seven pilots and seven engineers recently completed the course originally designed for senior Air Force officers but modified to eliminate combat training phases.

Previously 35 other representatives of the airlines had completed the course. Included in the group were such men as Arnold Sommermeyer, director of flying for United Airlines, and W. Waldo Lynch, assistant vice-president, communications of Pan American World Airways.

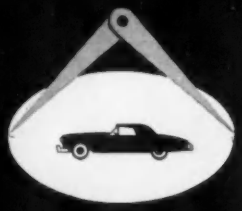
This cooperative action of the Air Force is doing much to prepare flight and operating personnel of the airlines to handle the new commercial jet transport recently ordered by the airlines.

(*Turn to page* 452, *please*)

Using

DU PONT ELASTOMERS

NEOPRENE • HYPALON®



in Design

HYPALON® solves some heat and ozone problems for resilient materials

HYPALON is completely unaffected by ozone, and, when it is compared with other kinds of rubber, it also shows unusual resistance to hardening at elevated temperatures (250°-350°F.). These two facts offer new opportunities to design engineers who are faced with the problem of using resilient materials in today's high-powered engines.

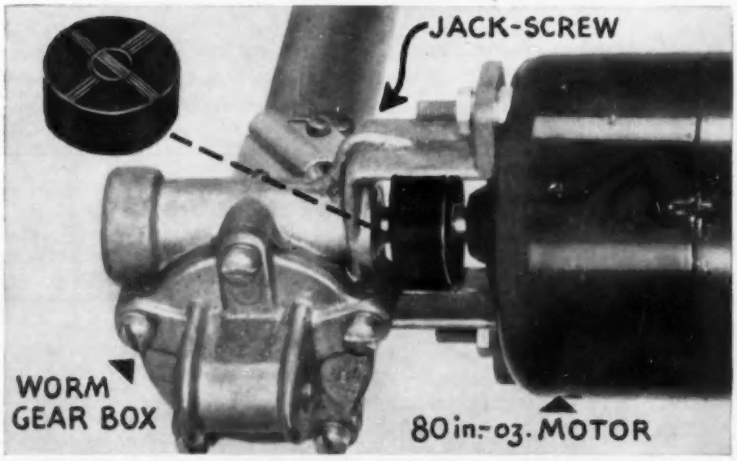
Already HYPALON is being used in molded spark-plug boots (see photo below) and ignition cable jacketing. In these applications, HYPALON's superior resistance to heat, plus the fact that it is completely unaffected by ozone, makes it a logical choice. HYPALON is the most economical choice in the long run, too, because it gives an extra-long service life to any product exposed to heat and ozone.

HYPALON has many other uses in the automotive industry. It's being used as a protective coating on rubber door stripping for automobiles because it protects against deterioration by sunlight and weathering. Durable HYPALON also can be compounded in an unlimited range of *light-fast* colors to blend with the modern fabrics and exterior paint colors of today's cars. These are just a few examples. For further information on HYPALON, just mail the coupon.



MOLDED spark-plug boots of HYPALON withstand high temperatures, are unaffected by ozone.

NEOPRENE flexible couplings in seat adjustor last well over 30,000 cycles



FRONT-SEAT ADJUSTOR propels seat with force of 1,200 lbs. Jackscrew is driven by 80 inch-ounce motor through neoprene coupling and worm gear.

Neoprene chosen for resilience, resistance to oil

The auto company that uses this seat adjustor has a test requirement of 30,000 cycles, operating a standard seat loaded with 450 lbs. When the unit was first designed, the manufacturer used a barrel spring for the coupling. It proved to be too noisy and barely lasted through 10,000 cycles before it failed.

The solution to the problem was the flexible coupling shown above. It consists of two flat metal inserts molded into a neoprene disk. One insert engages the worm shaft; the other engages a slot in the end of the motor shaft. Neoprene was chosen as the elastomer for the coupling because its resilience assured a quiet operation of the adjustor, and its superior oil resistance guaranteed long life to the coupling. The coupling is subjected to occasional contact with oil coming from the worm shaft.

NEOPRENE couplings outlast metal seat

The auto company's test engineer says he can't recall a neoprene coupling ever failing to pass 30,000 cycles. "In fact," he says, "in tests run to destruction, the coupling was still going strong when the seat itself was completely shot!"

This is just one example of neoprene's proven performance. Its resistance to oil, heat, weather and sunlight has led to its use in many other automotive applications. For more information on design problems solved through the use of neoprene, mail the coupon below.

DU PONT
REG. U. S. PAT. OFF.

HYPALON *is a registered trademark of E. I. du Pont de Nemours & Co. (Inc.)*

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*



Please send further literature and add my name to the mailing list for your free publications, the "Neoprene Notebook" and "Facts about HYPALON®," which show how the Du Pont elastomers are used in designing new products, improving old.

E. I. du Pont de Nemours & Co. (Inc.)
Elastomers Division, Dept. AI-3
Wilmington 98, Delaware

Name_____ **Position**_____

Firm_____

Address_____

City_____ **State**_____

The Business Pulse

Economic Tempo Shows Change in Character in Accordance With Initial Signs Given in Last Quarter of 1955. Picture in Automobiles, Construction, and Steel Cloudy, but Basic Strength Remains in Face of Temporary Adjustments

Boom Ceases Spiral Pattern

It has become increasingly evident that business activity has lost some of the exuberance that characterized it in 1955. Until a few months ago, economic indicators were moving upward almost without exception and with sufficient momentum to leave little doubt that the advance would continue for some time.

Today, however, there are signs of some hesitancy. Uniformity of movement has given away to a crisscross pattern; some indices are still moving ahead, but others are now beginning either to mark time or in some cases actually to tend lower.

Estimates of gross national product for the final quarter of 1955, which have recently become available, show that even then the boom was beginning to assume a different character.

For one thing, the figures show rather definitely that the upward thrust was beginning to moderate. On a seasonally adjusted annual basis, the rise in GNP from the third to the fourth quarter of last year amounted to $5.3 billion. This compares with an average rise of $8.3 billion in the four preceding quarters.

In real terms, the increase in the final quarter of 1955 was probably even less impressive from a comparative standpoint. Inflationary tendencies seem to have been more pronounced then than they were earlier.

This leveling-out of the boom hardly constitutes a surprise, since analysts have been cautioning for some time that it was to be expected. Of greater interest are the changing patterns which emerged in certain of the components that comprise GNP.

Consumer Expenditures Decline

Perhaps of greatest importance in this regard is the fact that personal consumption expenditures—which had been the principal factor of acceleration—exhibited much less buoyancy. These increased by only $1.5 billion at an annual rate in the fourth quarter of 1955, in contrast to an average rise of almost $5 billion in the first three quarters of the year.

Consumer outlay both for non-durable goods and for services advanced during the quarter at approximately the same tempo as in the third quarter of 1955. Expenditures on durable goods, however, declined by more than $2 billion. Not enough information is available at this writing to account completely for this decline in durable goods spending. Presumably, the slackening in automobile sales was an important factor.

This Survey Is Prepared Exclusively for AUTOMOTIVE INDUSTRIES by the Guaranty Trust Company of New York.

The slower rise of consumption expenditures in the fourth quarter of 1955 may mean that consumer attitudes have begun to shift in the direction of restraint and caution, particularly since it was not occasioned by any slowdown in income expansion. Disposable personal income actually rose by slightly more in the final quarter of 1955 than it had risen in the third quarter.

During the early phases of the business recovery, increases in consumer income had tended to be fully matched by increases in consumer spending. In the final three months of last year, however, consumers elected to save the greater portion of their income gain. Only about three-tenths of the $4.9 billion increase in the annual rate of disposable income for the period was used to expand consumption; seven-tenths, or $3.4 billion, going into saving. If this experience heralds the beginning of a new trend, it suggests that consumption expenditures may not be as dynamic over the near term.

A significant development also occurred in the area of private investment during the final quarter of 1955. Inventory accumulation, which had been of relatively limited importance in the earlier phases of the business upswing, advanced from an annual rate of $2.4 billion in the third quarter of the year to $5.3 billion in the final quarter.

This net change dominated the investment picture. A moderate gain in investment in producers' durable equipment was counterbalanced by a slight decline in investment in new construction.

GNP Reflects Boom Change

The Government component of GNP advanced in the last quarter of 1955 by $1.4 billion at an annual rate. The principal significance of this gain is that it reflected not only the long-term moderate rise of State and local government outlay, but also a rise in expenditures on the part of the Federal Government. This tended to strengthen the belief that the retrenchment phase of Federal activity is at an end, for the time being at least.

These fourth-quarter GNP developments definitely add up to a change in the pattern of the boom. Even more important than the leveling-out tendency are the signs of qualitative change.

Specifically, a departure is noticeable from the initial phase of recovery. At that time, the economy had been propelled forward primarily by keen final demand in the private sector; Governmental activity was more or less neutral, and inventory investment was of restricted significance. By the last three months of 1955 the most expansionary element in the private area had become inventory accumulation. Rising Government outlay became once again a notable factor of increase.

Events since the opening of 1956 suggest that the modification of the upward pattern, which became evident in the final quarter of 1955, has continued more recently.

Retail trade, for example, has been buoyant in comparison with the situation a year ago, but it has not demonstrated any real tendency toward expansion. Nation-wide sales at the retail level in January amounted to $15.8 million, exactly the same figure as in each of the last four months of 1955. Furthermore, the Federal Reserve's seasonally adjusted index of industrial production held in January at the December level of 144 per cent of the 1947-49 average.

Three Troublesome Areas

The automobile industry, of course, has been the scene of the most notable retrenchment in production since the

(*Turn to page* 404, *please*)

Multi-Flex quiz for automotive engineers who want greater freedom of design



WHAT ARE U. S. MULTI-FLEX PRODUCTS?

They are accordion-like, tubular rubber products that have a versatility and an adaptability impossible to duplicate in connections made by conventional methods. Produced by United States Rubber Company, they are made of natural or synthetic rubbers—with or without cotton, asbestos, glass or nylon fabrics. With few exceptions, all U. S. Multi-Flex products are made to order for specific applications.

MULTI-FLEX PRODUCTS ARE CIRCUMFERENTIALLY CORRUGATED!

This gives flexibility, rigidity, and the ability to take movements in axial extension and compression. Other qualities are:
• Resistance to crushing and fatigue • Resistance to extremes of temperatures, abrasives, corrosives, oil, water, and grease • High travel ratio.

WHAT ARE SOME EXAMPLES OF MULTI-FLEX PRODUCTS?



Above are shown only six of the various styles of U.S. Multi-Flex boots. Because Multi-Flex boots are custom-made, THEY CAN BE "TAILORED" TO MEET THE EXTENSION, COMPRESSION AND DESIGN REQUIREMENTS OF ALMOST ANY APPLICATION.

WIDE APPLICATION FOR MULTI-FLEX!

In industry: Multi-Flex boots are used for rams in hydraulic presses making grinding wheels or other abrasive materials; on adjusting screws in grinders and machine tools; for guide rods in mechanical stamping presses; for reciprocating parts and for pistons and worm gears in a multitude of applications; for any hydraulic cylinders and other reciprocating parts requiring protection.

Automotive Engineers: there is probably an application for Multi-Flex in your design. Why not check with us today?

In Detroit, phone Trinity 4-3500 or write U. S. Rubber, Automotive Sales, New Center Bldg., Detroit 2, Michigan.

US RUBBER

Mechanical Goods Division

United States Rubber

Accessory Drives Discussed at

Turbojet Engine Hydraulics Symposium

By Joseph Geschelin

THE impact of advanced jet engine developments and missile progress on power-consuming accessories was aired in a series of papers presented at the Turbojet Engine Hydraulics Symposium, held under the sponsorship of Vickers, Inc. in Detroit in February. It may be noted that the papers all were of highly technical nature compatible with the requirements of the founder engineering societies.

In addition to the gathering of Vickers engineers from various sections of the country, the meeting was attended by research engineers representing the major producers of jet engines, with 13 engineers from various General Electric plants. There were representatives from airframe producers, including: Hughes, Lockheed, North American, Marquand, Thieblot, and Douglas; as well as Eastern and United Air Lines. Foreign interests were represented by Air France, Armstrong-Siddeley, Canadian Pratt & Whitney, Rolls Royce of Canada, D. Napier & Son Ltd., Orenda Engines Ltd. In addition, there were three representatives from U.S.A.F. Others in attendance represented refiners and oils suppliers, including: California Research, Esso, Dow-Corning, Monsanto, Oronite Chemical Co.

Quite logically the first paper on the program opened with a thermodynamic analysis of the effect of robbing power for accessory drives on two-spool turbojet engines. Presented in exceedingly masterly fashion by E. M. Ramberg and A. E. Gonsolus, Parameters, Inc., the paper was in the form of a complete mathematical analysis of an idealized engine, using the classical generalized approach.

The object of the paper was to evaluate the two most common forms of power transmission—pneumatic and hydraulic—to determine which one offered the best promise. It emphasized first of all that any form of power extraction from any kind of powerplant is a penalty in terms of increase in specific fuel consumption and a reduction in maximum thrust capacity for moving the airplane. This is invariably true whether or not the engine is designed to produce sufficient excess thrust to take care of the entire design load.

Since the mathematical analysis is quite extensive, it is sufficient to say that mechanical power extraction, i.e., using a shaft drive for hydraulic transmission of power to accessory drives, is found to be superior, in general, to air bleed power extraction. As a matter of fact, under certain conditions of operation and assuming a suitable control system, the superiority of mechanical vs air bleed is of the ratio of 2 to 1 and may be as high as 2.65 to 1.

This set the stage for E. I. Brown of Vickers to present the case for the hydraulic system for powering accessory functions of all kinds. He mentioned first that the requirements for power extraction are increasing, currently demanding from five to 10 per cent of total power at altitude. He cited calculations to show that the efficiency of hydraulic pumps and motors is almost double that of air drives. The effect on specific fuel consumption, in particular, is quite striking. At cruising speeds, the air drive may require more than 2.5 times the amount of fuel, perhaps of the order of an additional 240-lb/hr fuel load.

Brown also claims there is a considerable weight penalty as well as a serious installation problem with air turbine drive since it requires air ducts around four inches in diameter as contrasted with ¼-in. hydraulic plumbing lines.

He also stated that hydraulic systems response is immediate and its control characteristics superior. The most efficient manner of utilizing hydraulic systems is to combine as many functions as possible. One example noted was a self-contained starter pack for hydraulic starters, driven by a four-cylinder, aircooled McCulloch engine. When in flight the starter pump can be employed to drive motors for other functions.

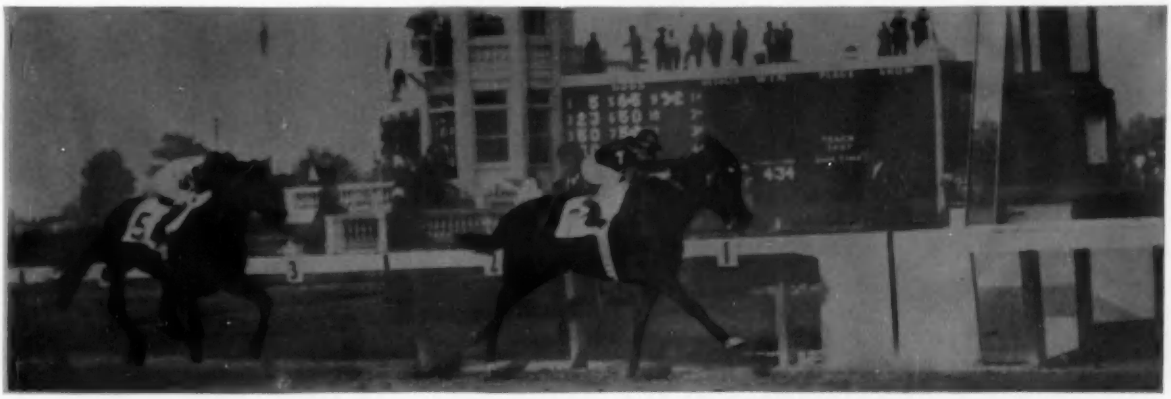
An evaluation of servo pumps vs servo valve controls was presented by L. D. Taylor of Vickers. He described the advantages and limitations of each type, then showed a typical form of analysis tabulation useful in making an evaluation on the basis of response characteristics, power loss, stability, and weight.

To keep pace with developments in this field, K. I. Postel, Vickers chief design engineer, reported on the progress being made in the development of high temperature components. In defining what is meant by "high" temperature, Postel cited the current SAE criteria as shown below:

Max. System Temperature, F.	Life Hours
275	560
400	250—for controls and advanced performance airplanes
550	10—for missile applications

Vickers has tested more than 20 pumps to destruction recently in the range of 550 F inlet and ambient temperature, making progressive changes in design elements as well as in metallurgy in logical steps. In the last group of 10 pumps only two showed mechanical failures, the remaining eight being due to seal failures.

(*Turn to page* 392, *please*)



If all cars with Rochester Carburetors were painted orange . . .

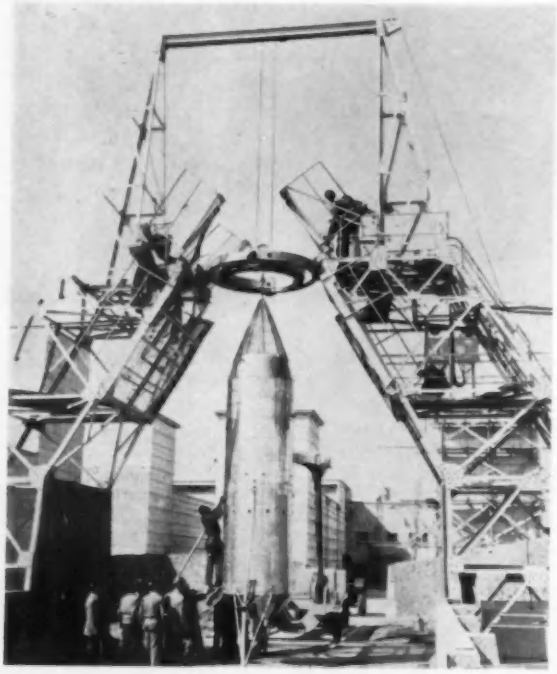


the Kentucky Derby parking lot would look like this!

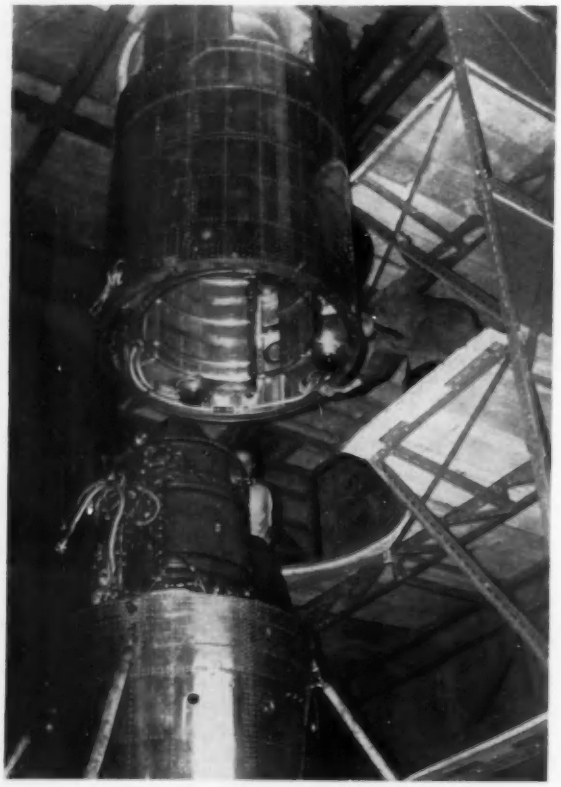
They're off and running with Rochester!
Nearly half the new cars on the road today are "fed" by Rochester Carburetors. These modern mixers are specially designed to supply the proper needs of gas and air for today's high-powered, high-compression engines. Rochester Carburetors are rugged . . . shrug off extreme heat or cold! They're responsive . . . assure top performance in every driving situation. And you'll find them on the world's finest engines. Rochester Carburetors are standard equipment on the new Cadillac, Buick, Oldsmobile, Pontiac and Chevrolet.

CARBURETORS BY ROCHESTER PRODUCTS

ROCHESTER PRODUCTS DIVISION OF GENERAL MOTORS CORPORATION ROCHESTER N.Y.



Preparing to mount Atar jet engine in gyroscopic test bed



Atar engine and test housing

French Manufacturer *Tests* VERTICAL TAKE-OFF EQUIPMENT

By W. F. Bradley
Special European Correspondent
for AUTOMOTIVE INDUSTRIES

PARIS, FRANCE

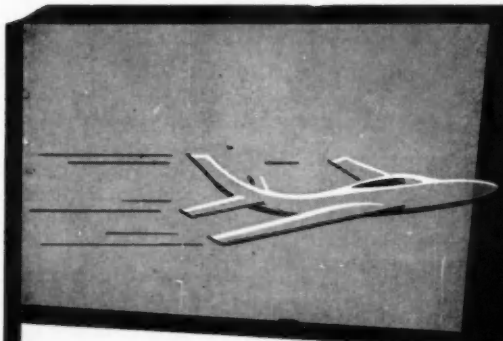
THE French National Aero Engine Co. is conducting a series of tests for vertical take-off equipment which will lead to the evaluation of a full-size machine, anchored by a cable but under full directional control.

Research work began with a ram-jet model, which did not allow of a study of stability, roll, and gyroscopic disturbances. Under the P1 stage, use was made of an Atar jet engine of 6160 lb thrust, suspended vertically in a 115-ft high gyroscopic test stand. The Atar engine is mounted in a light alloy housing, together with 150 gallons of kerosene, and suspended with the point vertical in a universally-jointed ring around the center of gravity. By radio control, the engineers in an armored-concrete test house can study all the problems of piloting and control the machine around its three axis.

Under the second part of the P1 stage the machine will be released from its gyroscopic collar and held by cables, still controlled by radio from the test house, and permitted to rise to a height of about 300 ft.

Under the P2 stage the tests will be of the same nature, with a pilot aboard in a removable cabin in the nose of the machine. Although anchored by cables, it will be free from land control. This stage is expected to be undertaken at an early date.

The final stage will be P3, with an Atar afterburner jet which will develop a thrust of 9900 lb. This machine should attain Mach 1 in one minute, for at 250 mph a rocket will cut in developing power equal to that of the jet engine. This probably will be the first vertical take-off of a fully controlled machine by the company.



New...

savings now possible with AIRITE* cables and assemblies...



BERGEN'S improved swaging process allows full strength ratings... cuts rejects

Bergen's new hydroformer molds fitting shafts around cables by rotary pressure with minimum disturbance of the grain structure. Internal stresses and fatigue cracks are greatly reduced in comparison with conventional swaging methods. Fittings are always in perfect alignment which develops the full rated strength of cables and assures equal load distribution.

AIRITE* cables, slings, tie-downs and assemblies have met the most exacting requirements of aircraft manufacturers for many years. Millions of hours in service under every possible operating condition prove their dependability.

For maximum strength and dependability specify AIRITE*

*TRADEMARK



AIRCRAFT DIVISION

BERGEN

WIRE ROPE COMPANY

Send today for literature.....

40 GREGG STREET, LODI, NEW JERSEY

©NTI

Free Literature

(*Continued from page* 372)

Recorder-Controls 21

Bulletin 7202 describes the new Tel-O-Set vertical scale indicator and gives latest information on Tel-O-Set recorders and controllers, used to measure and control process variables such as temperature, pressure, flow and liquid level. *Minneapolis-Honeywell Regulator Co.*

Automatic Plating 22

Folder descriptive of the Cyclemaster automatic plating machine may be obtained from *The Udylite Corp.*

Synthetic Fluids 23

A new 52-page booklet on Ucon synthetic fluids and lubricants, covering the properties, applications and characteristics of these polyalkylene-glycol derivatives, has been issued by *Carbide and Carbon Chemicals Co.*



YA® radiators . . .

On giant diesel locomotives . . . one of the toughest of all radiator applications as far as space limitations, power concentration, and vibration characteristics are concerned . . . you'll find Yates-American radiators specified as the radiators that can take rough going, and like it! So whatever your products . . . if you require the best in radiators, write today for complete information and descriptive literature on Yates-American radiators for all purposes.

California Representative:
E. E. RICHTER & SON, Emeryville, Calif.

YA® Heat Transfer Products Division
Yates-American
BELOIT, WISCONSIN
BRANCH OFFICES: CHICAGO, ILLINOIS; HIGH POINT, NORTH CAROLINA; MEMPHIS, TENNESSEE; PORTLAND, OREGON

Aircraft Steels 24

Included in a 68-page revised edition of a booklet is condensed information on Army, Navy and Government aircraft steel specifications and the sizes, shapes and qualities of aircraft alloy and stainless steels that are available from warehouse stocks. *Joseph T. Ryerson & Son, Inc.*

Expansion Joints 25

Hydrolastic expansion joints are described in 24-page catalog 53, which gives details of construction and application data. *Cook Electric Co.*

Surface Grinders 26

A variety of precision surface grinders, manual and automatic, for tool room and production grinding operations, is offered in 24-page catalog, form 54-401. *DoALL Co.*

Limit Switches 27

Seven models and 19 contact arrangements of Loxswitch heavy-duty machine tool limit switches are described in catalog 955. *R. B. Denison Mfg. Co.*

Sprag Clutches 28

Catalog 103-C, eight pages, covers a line of standard clutches and clutch-coupling units for over-running, indexing and backstopping applications. *Formsprag Co.*

Conveyors 29

A four-page bulletin on Delpark shuttle-drive conveyors for materials handling gives technical details on this new type oscillating conveyor for industrial applications. *Industrial Filtration Co.*

Air Components 30

The line of Allenair cylinders, valves, clamps and dial feed indexing tables is featured in a recently-issued catalog. *A. K. Allen Co.*

Wire Machines 31

Nineteen models of wire straightening and cutting machines are listed in 16-page brochure M 55-3. In addition are shown a new chamfering and deburring machine, and wire reels with a fast-action locking feature. *Lewis Machine Co.*

(*Turn to page* 388, *please*)

on an

Acme-Gridley

FULLY AUTOMATIC BAR TYPE TURRET LATHE

you can machine this finger-holder spool in 3 minutes

. . . and do it all day long!

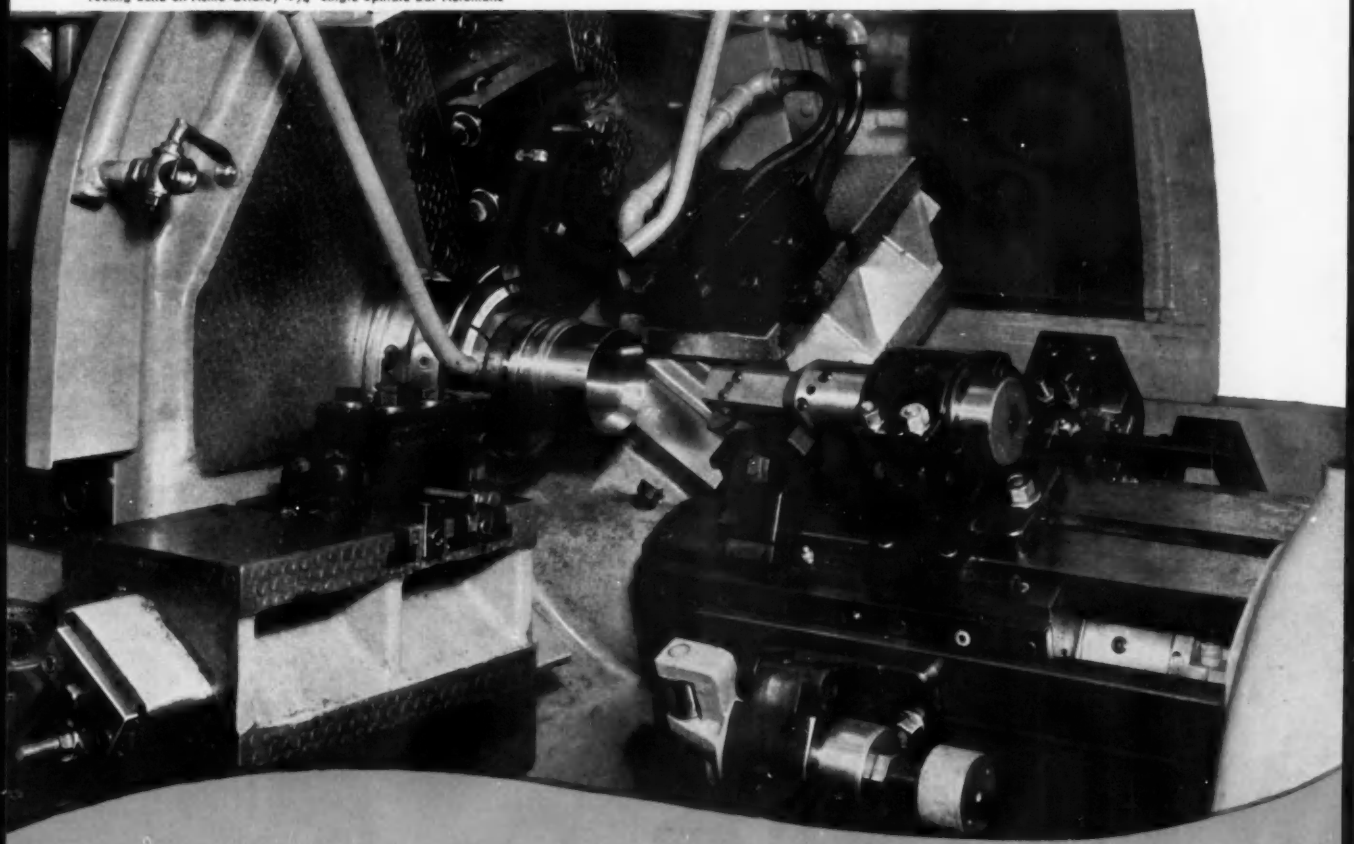


Material—4620 Steel Tubing
Machine Time—3 Minutes
Number of Operations—15, including angular turning attachment; carbide tooling throughout.

Here's the answer: Dependable, automatic control of the work cycle . . . production is always at the same predetermined rate. Also, on the ACME-GRIDLEY Single, you complete more operations on the primary tooling setup—the best way to get greater accuracy, save time and save floor space. *And* one man can operate two or more machines, depending upon the cycle time of the work involved.

Why not learn more about the machine that made such a big hit at the Machine Tool Show? Get the full details in Catalog M-50A . . . then you'll *want* to discuss your production with a National Acme engineer.

Tooling zone on Acme-Gridley 4¼" Single Spindle Bar Automatic



the National Acme company

173 EAST 131ST STREET • CLEVELAND 8, OHIO

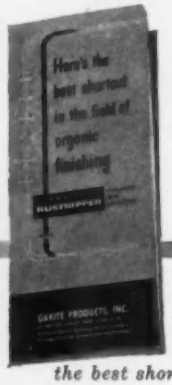


Here's the best shortcut in the field of organic finishing

One operation usually removes paint, rust and oil at the same time.

One tank of Oakite Rustripper frequently does all these jobs: (1) strip rejects and conveyor hooks; (2) pickle rusted stock; (3) prepare reconditioned products for refinishing operations.

One tank may eliminate many tanks used in ordinary cycles.



FREE: Our illustrated booklet tells how this amazing cleaner-stripper-deruster offers tremendous possibilities for saving minutes, hours, dimes, dollars. Write or send coupon for your copy.

OAKITE PRODUCTS, INC.
28A Rector St., New York 6, N. Y.

Send me a FREE copy of your booklet *"Here's the best shortcut in the field of organic finishing"*

NAME_____

COMPANY_____

ADDRESS_____

Technical Service Representatives in Principal Cities of U. S. and Canada

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS · METHODS · SERVICE
SCIENCE

Free Literature

(*Continued from page* 386)

Vertical Lathe 32

Bulletin VL-1 describes a new vertical automatic production lathe, with platens for mounting turning or grooving slides, multiple tool slides, or tracer slides. Machine capacities range from 5 to 25 hp. *Sundstrand Machine Tool Co.*

Rubber Pivots 33

Bulletin 703 is descriptive of Dynaflex rubber pivot joints designed for heavy-duty applications on commercial vehicles in such locations as leaf spring eyes, radius rods and load equalizer beams. *Lord Manufacturing Co.*

Hand Tools 34

Hand tools for the sheet metalworker, including nine new units, are described and illustrated in 10-page bulletin 78-B. *Niagara Machine & Tool Works.*

Small Motors 35

Catalog RB-400 includes data on micromotors for applications such as in window lifts, seat adjusters, windshield wipers, actuators and torque motors; as well as information on blowers. *Redmond Co., Inc.*

Carbide Tools 36

The most effective cutting speeds for carbide tools, machine tool hp requirements, how to determine shank size of single-point tools, carbide tool geometries, carbide grade selection and other technical topics are covered in new 66-page metalworking catalog GT-310. *Carboloy Dept., General Electric Co.*

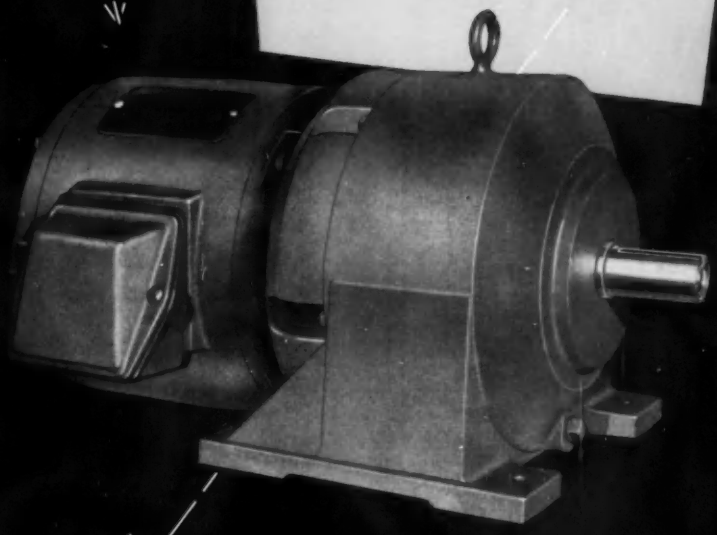
Hydraulic Motors 37

Described in two-color bulletin DM 321 is the Dudco MF-100 series of vane-type hydraulic motors which operate at pressures up to 2000 psi and maximum continuous speeds up to 2400 rpm. *Kalamazoo Div., New York Air Brake Co.*

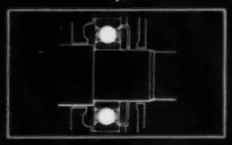
AI Index 38

Index for Vol. 113 (July 1 to Dec. 15, 1955) of AUTOMOTIVE INDUSTRIES is now available.

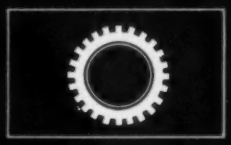
Don't overlook what you can't see



You can't always see what makes a gearmotor outstanding. It's the attention paid to small design details that makes the difference. Here are a few of the details that make the new Reliance Gearmotor stand above the rest.



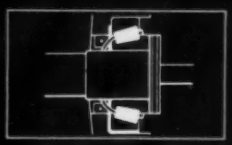
FOOLPROOF METERMATIC motor bearing lubrication and oil bath gear lubrication for long-life protection against wear.



INDUCTION HARDENING of the tough alloy steel gears gives a perfect combination of wear resistance and strength.



SIMPLIFIED GEARING with few moving parts reduces friction losses and lessens chances of breakdown.



THRUST BEARINGS handle heavy overhung loads safely by placing strain on the frame instead of the shafts.

Find out the complete story for yourself— contact your Reliance representative or write for Bulletin E-2408.

E-1509

REDUCE SPEED

RELIANCE ELECTRIC AND ENGINEERING CO.

CLEVELAND 10, OHIO • OFFICES IN PRINCIPAL CITIES

Canadian Division: Welland, Ontario



BEFORE *you start*
planning or producing
NEW DESIGNS

USING (B) SPECIAL FASTENERS can make a big difference... in many ways. Users report faster assembly, lower production costs, better products, smarter designs and, in a nutshell, more competitive products. So before you start...stop and think of how you can use specials to advantage.

YOU CAN GET some good advice and information from Buffalo Bolt, based upon over 100 years' experience. We have been engineering specials from rough sketches, with basic specs, and have quoted successfully on many designs engineered by our customers. In either case, you will receive immediate attention by calling any of our offices.

BUFFALO BOLT COMPANY
Division of Buffalo-Eclipse Corporation
NORTH TONAWANDA, N. Y.

● *3 convenient service centers*

WESTERN OFFICE	EASTERN OFFICE	CENTRAL OFFICE
Chicago	New York City	North Tonawanda
HArrison 7-2179	REctor 2-1888	JAckson 2400 (Buffalo)

Many **GOOD** *products can be made* **BETTER** *...with* **(B) SPECIAL FASTENERS**

Production Grinding on Torque Converter Housings

(*Continued from page* 231)

operator to be unloading and reloading one table (or in some instances one rotary magnetic chuck) while the other is presenting a load of work to the grinding spindle.

On the torque converter housings mentioned, this is one advantage obtained. Another is the fact that two dissimilar fixtures, designed for holding the housings on their two sides, can be accommodated by the two work tables. A production rate of 17.4 pieces per hour is obtained by one man, finishing the pieces on both sides.

The grinder tables are revolved at a speed of 45 rpm, and an average of from 0.060 in. to 0.070 in. of stock is removed from each of the two surfaces during the operation. Segment-type wheels are employed, with eight segments to a set. This type of wheel allows freer movement of coolant to the surfaces at all times. Coolant used on this job is Max Mix 1115. Eight gallons are used with 137 gallons of water.

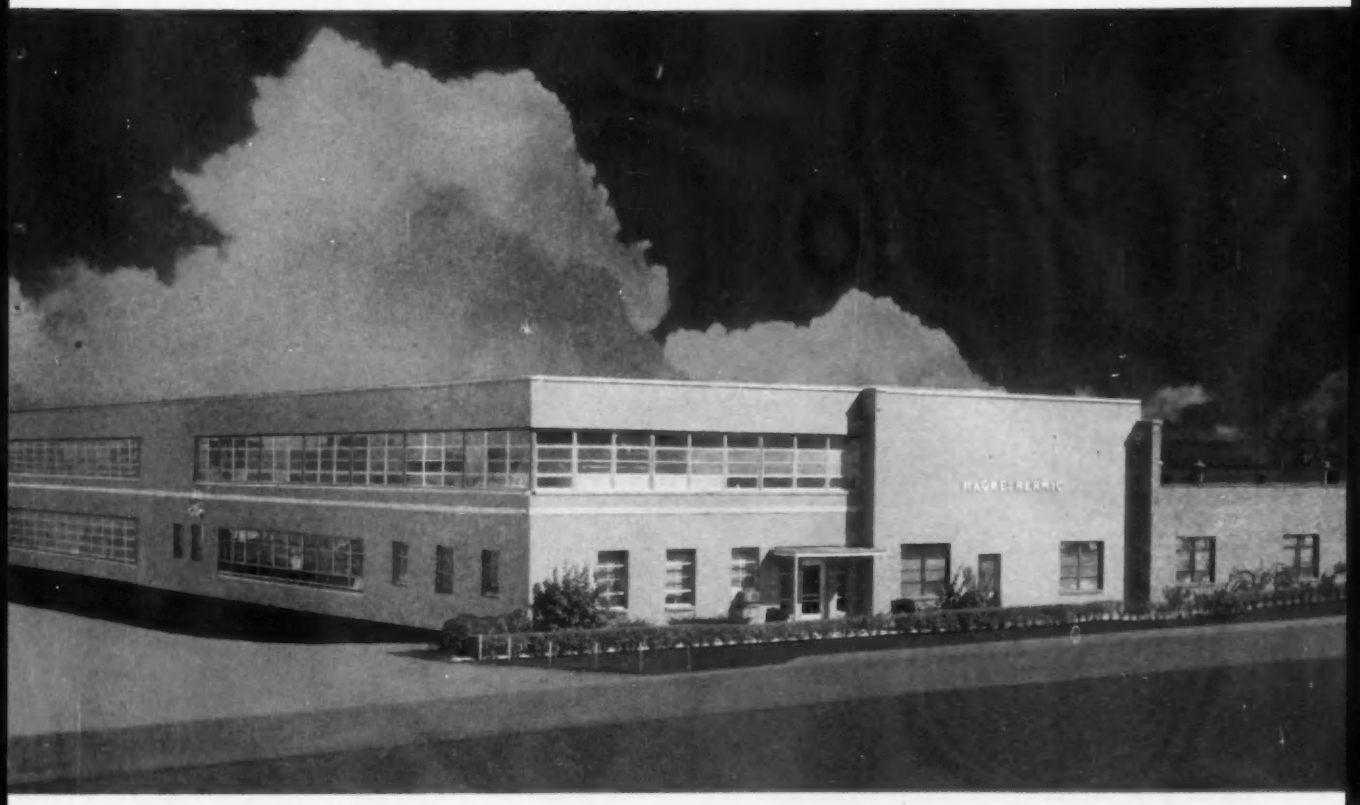
Production has been greatly increased on this job as against what was obtained in the way it was formerly handled. Previously, it was necessary to mill the work first, taking two cuts from each surface with a milling machine, then finish to specification later on a different type of grinder, making a total of three cuts per surface. Even though two milling cuts were taken, the milling operation would not hold a sufficiently close tolerance, so the grinding operation was necessary afterward.

With the duplex grinder now being employed, only one operation is required on each face of the casting. Along with other advantages, setup time has been reduced by at least 50 per cent.

BOOKS...

JANE'S ALL THE WORLD'S AIRCRAFT FOR 1955-56, *available from American Library Service, 117 West 48th St., New York 36, N. Y. Price, $19.75.* The new edition of this well-known reference gives latest available information on all types of military and civil aircraft in the world, including specifications and records of performance.

INDUCTION HEATING IS OUR ONLY BUSINESS



Only one interest here . . . Your Order For

INDUCTION HEATING EQUIPMENT

Is heating or heat-treating involved in your metal-working process?

If so, let a Magnethermic engineer review your operations and show you what induction heating can do for you.

For example, Magnethermic has designed high frequency equipment for continuous localized heat-treating of electric welded pipe. Another Magnethermic installation pre-heats 32″ diameter aluminum ingots, weighing 5,000 pounds, prior to extrusion.

Magnethermic's plant at Youngstown houses diversified facilities and specialized personnel devoting full time to induction heating, Low, Dual and High frequency.

Whether your inquiry concerns heat-treating, hot working or joining, Magnethermic can do the job. For specialized, intelligent attention, *place your inquiry with the specialist—Magnethermic.*



Turbojet Hydraulics Symposium

(*Continued from page* 382)

One answer to more reliable seals is offered in the adoption of stainless steel tubular O-rings, held in place by side-wise crushing.

The objective of Vickers research is to produce a pump capable of operating at 550 F for 50 hours.

An exposition of the test methods and equipment for conducting high temperature studies at Vickers was given by A. B. Billet of Vickers.

Finally, a group of four papers dealt with the potentialities and requirements of hydraulic fluids for use in high temperature systems. The discussion began with an evaluation of hydraulic fluids by Bernard Rubin and Lt. Harry M. Schiefer of the U.S.A.F., showing the advantages and limitations of available materials. As a result, the military branch is concentrating most research on silanes, chlorinated silicones, hydrocarbon and mineral oils, and chlorinated biphenyls.

The behavior and advantages of Oronite high temperature hydraulic fluids were described by a team consisting of N. W. Furby and R. L. Peeler of California Research Corp., and R. I. Stirton of Oronite Chemical Co. They indicated that Oronite fluids 8200 and 8515 have outstanding properties on the following counts:

viscosity at high temperatures
viscosity index
shear stability
volatility
oxidation and corrosion stability
thermal stability

The role of high temperature hydraulic fluids based on silicone esters as base stock was discussed by H. S. Litzsinger and R. E. Hatton of Monsanto Chemical Co. Describing specifically their OS-45 and/or OS-45-1 materials, the authors conclude that of all readily available chemical compounds the silicate esters offer the greatest number of advantages. They said further that silicate esters as thus formulated are completely satisfactory for the known advanced hydraulic systems.

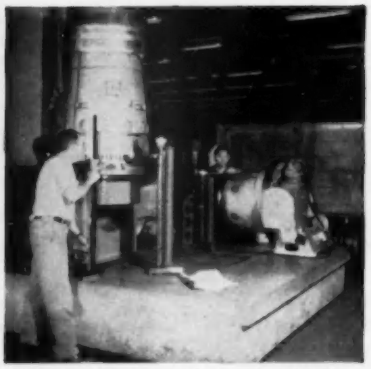
In terms of overall physical properties the silicones are most promising base materials for high temperature fluids, according to the paper by W. H. Ragborg, Dow-Corning Corp. Major deterrent to their use has been questionable lubricating properties with common bearing steels. Since it is anticipated that suitable design changes will be made in the equipment for high temperature hydraulic systems, it may be possible eventually to take full advantage of the superior physical properties of silicone fluids. Meanwhile, work is continuing on improvement in lubricity. In any event, silicones offer most promise in high temperature applications.

It is only fair to note that each producer of these special fluids is conscious of their limitations as well as the compromises that are required to make them function properly in high temperature systems. No fluid is offered as a cure-all or as an ideal answer to the general problem.

ROTABS Beat Precision Inspection Costs...



This 24" ROTAB plus centering fixture cuts checking time for 11 dimensions on six vane segments from several hours to 5 minutes each.



Checking big jet engine assemblies is fast and simple on ROTABS (36" & 48"), eliminates costly fixtures made obsolete by engineering changes.



Seconds-of-arc precision allows quick, accurate inspection with low cost standard gages. Here 36" powered unit checks vane spacing.



For small parts inspection this 12" universal ROTAB minimizes setup and inspection time, does not require power for tilting and rotation.

For complete data on the optical precision readings you get with the ROTAB at the lowest cost, write:

MACHINE PRODUCTS CORP.
6771 East McNichols Road Dept. A DETROIT 12, MICH.

AUTOMOTIVE INDUSTRIES KEEPS YOU INFORMED

Bet your boots we make 'em



Custom-designed and engineered to fit mechanical giants or midgets

Whether you want a boot two stories high . . . or no bigger than your thumb . . . let C/R Sirvis engineers solve the problem for you. They're specialists . . . backed by 78 years' experience . . . with unusual skills and ingenuity in the development and manufacture of mechanical boots. They'll design and produce a C/R Sirvis boot to your exact requirements in any size, any quantity . . . using only the finest materials: mechanical leather, selected, tanned and treated by C/R . . . nylon . . . or elastomer-coated fabric. The absolute dependability of your boot will be proved before production.

So, whenever your problem involves the protection of eccentric, reciprocating or universal action . . . call on C/R. Write us for complete information.

CHICAGO RAWHIDE MANUFACTURING COMPANY
1205 Elston Avenue • Chicago, Illinois

Offices in 55 principal cities. See your telephone book.

In Canada: Distributed by Super Oil Seal Mfg. Co., Ltd., Hamilton, Ontario

Export Sales: Geon International Corp., Great Neck, New York

SIRVIS C/R DIVISION
CHICAGO RAWHIDE

Other C/R Products
C/R Shaft & End Face Seals • Sirvene (synthetic rubber) molded pliable parts • C/R Non-metallic Gears





ET!



Only Quiet One-Shot "Magnamatic" has Torque Control PLUS all these advantages:

- Doesn't require frequent readjustment to hold torque value
- Completely disengages the instant the fastener is run to desired tightness.
- Eliminates stripped threads, sheared fasteners, surface damages.

"Magnamatic" controlled-torque screwdriver at work!

CP One-Shot "Magnamatic" is the quietest screwdriver-nutrunner ever developed! Clutch buzz and ratcheting have been eliminated and exhaust noise is effectively muffled by a new principle of baffling.

Quiet One-Shot "Magnamatic" is an air-driven screwdriver-nutrunner that can be set to run nuts and screws to specified torque. Here's how: The Alnico magnetic One-Shot clutch, adjustable to specified torque, disengages completely the instant the fastener is driven to desired tightness. Maintains the selected torque setting indefinitely—prolongs clutch jaw life. Inexperienced operators don't burr screw heads, strip threads, shear fasteners, or damage work. Screw bits last longer.

CAPACITIES:

#4 screws to ⅜" bolts.
Reversible and non-reversible types.

Chicago Pneumatic

Pneumatic Tools • Air Compressors • Electric Tools • Diesel Engines
Rock Drills • Hydraulic Tools • Vacuum Pumps • Aviation Accessories

Chicago Pneumatic Tool Company, Dept. M-27
8 East 44th Street, New York 17, N. Y.

- ☐ Please send me FREE booklet SP-3165 "Magnamatic Case Histories."
- ☐ Please send me "Magnamatic" Bulletin SP-3126.
- ☐ Have representative call.

Name_____ Title_____
Company_____
Address_____
City_____ Zone_____ State_____

THERE'S A LUBER-FINER MODEL FOR EVERY TYPE OF ENGINE FOR EVERY TYPE OF OIL!



Model 750-C



Model 200-S



Model 135-S



Model 78



Model 500-C



Models F-155 F-120



Models 272-C 363-C



Models 750-2C 750-3C

ONLY A GENUINE Luber-finer PLUS A GENUINE LUBER-FINER PACK

CAN GIVE THE EXCLUSIVE PATENTED FILTERING PROCESS THAT HAS MADE LUBER-FINER THE Standard Of The Industry Since 1936

MODELS 78, 135-S, 200-S, featuring single-bolt lid, screw-in type pack, and overall compact design for use where space is limited. These Models provide the ultimate in filtration for passenger cars, small trucks and tractors, and other similar engines up to 5-quart, 6-quart, and 7-quart crankcase capacities.

MODELS 272-C and 363-C, featuring the Luber-finer single-bolt lid clamp, O-Ring lid gasket, screw-in type pack, and rugged construction throughout. Designed for heavy-duty service on gas, gasoline or diesel engines up to 3-gallon and 4-gallon crankcase capacities.

MODELS 500-C and 750-C, featuring the Luber-finer single-bolt lid clamp O-Ring lid gasket, large-capacity packs, and extra rugged construction to withstand the most severe service. Designed for use on gas, gasoline or diesel engines up to 5-gallon and 8-gallon crankcase capacities. Also widely used on fuel lines, hydraulic oil systems, and many other industrial applications.

MODELS 750-2C & 750-3C, featuring the Luber-finer single-bolt lid clamp, O-Ring lid gasket, and multiple packs for extra large capacity. Available with either wall or floor mounts for industrial use on engines up to 35-gallon sump, fuel lines up to 15 GPM, hydraulic oil systems up to 450 gals. For larger capacities, two or more Units can be connected in parallel.

MODELS F-120 and F-155, for gasoline and diesel fuel lines on mobile, stationary, or marine applications. Extremely efficient in removing impurities and contaminants from fuel. Single Units will handle flow rates from 0.5 to 1.0 GPM on suction or gravity flow. For larger capacities, connect two or more Units in parallel, or install on pressure-side of fuel pump.



GENUINE LUBER-FINER PACKS available in two types...

DIESELPAK — Expressly designed and recommended for use with all detergent-type compounded oils. Has the abilily to remove the most finely dispersed contaminants without removing or affecting the additives.

REFINING PACK — For use on straight mineral oil, synthetic oils, diesel fuel oil, hydraulic fluids, etc.

★ **THERE IS A GENUINE LUBER-FINER MODEL FOR PASSENGER CARS, TRUCKS, TRACTORS, STATIONARY AND MARINE ENGINES, HYDRAULIC OIL SYSTEMS AND MANY INDUSTRIAL APPLICATIONS.**

WRITE FOR COMPLETE INFORMATION TO DEPT. 43

LUBER-FINER, INC. 2514 S. Grand Ave., Los Angeles 7, Calif

Air Hydraulic Suspension System

(*Continued from page* 229)

tube design air spring.

The special anti-friction bearing rings are resiliently mounted in order to permit self-alignment of each unit. The mounting design also permits some expansion or contraction and thus minimizes friction change due to temperature variation, etc.

The second type of air spring unit which we have designed and tested is the rubber bellows type. The bellows spring consists of a rubberized cord bellows with the diameter and number of convolutions dependent upon the loads to be carried and the desired frequency. As the vehicle axle moves up and down the flexure of the bellows produces a change in volume with a corresponding increase or decrease in air pressure. The percentage increase or decrease may be regulated to some extent by use of expansion tanks connected to the bellows units. The size of the expansion tanks also has a bearing upon the oscillation frequency of the suspension. However, after a certain volume has been attained, additional expansion volume shows little effect on frequency.

The rubber bellows spring has certain advantages over the telescoping metallic tube type spring. Chief among these are the elimination of the seal and the anti-friction bearings.

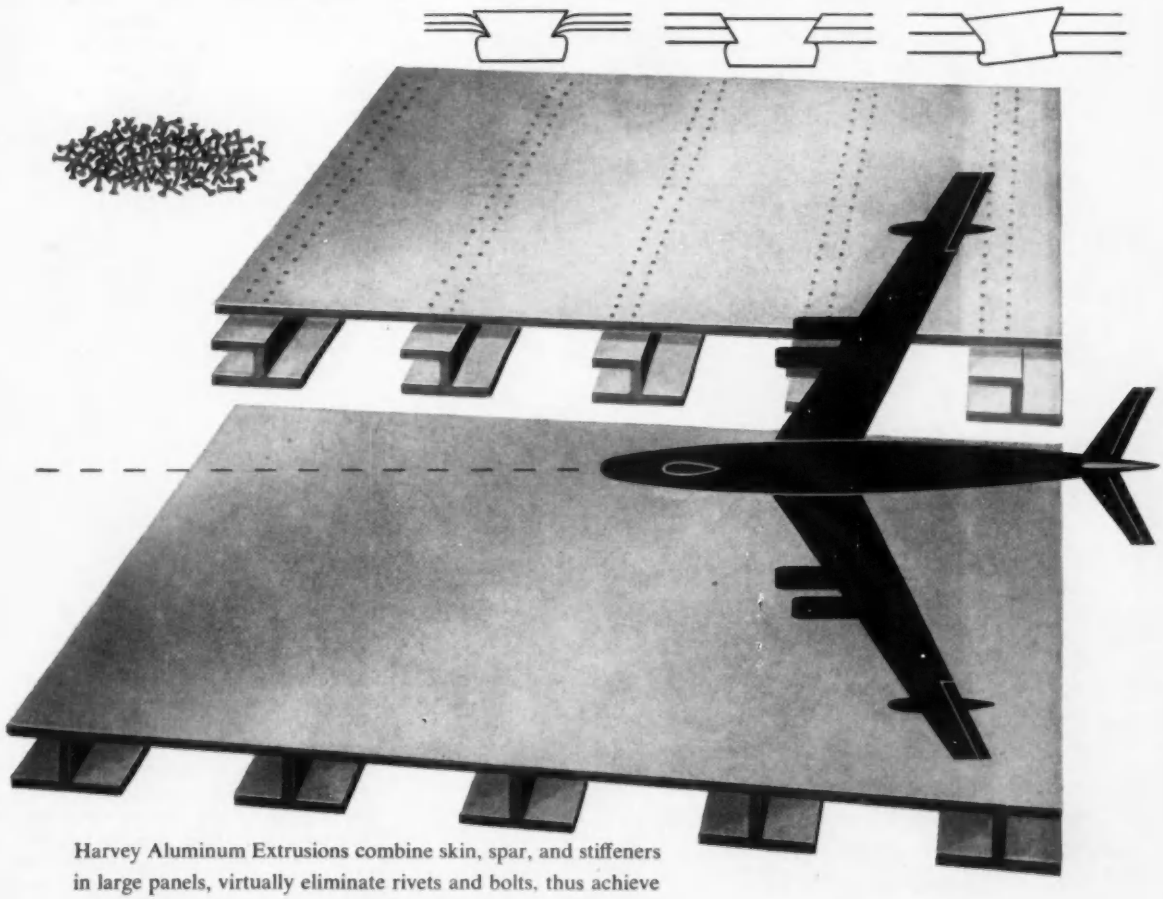
The main disadvantage of the rubber bellows air spring has been the difficulty encountered in obtaining a suspension with an oscillation frequency low enough to provide optimum riding qualities. Numerous design changes have been made both in details of bellows construction and in mounting locations. The sum total of the various changes has resulted in an oscillation frequency which is believed to be satisfactory for most applications.

In both the telescoping metallic tube type air spring and the rubber bellows air spring, a hydraulic shock absorber or damper is incorporated as an integral part of the unit. The shock absorber is centrally located within the air spring and is used as a structural member which actually ties the axle to the body or frame.

This then is one of the features of the Monroe design; a hydraulic shock absorber and an air spring combined in one integral unit complete with a leveling device. This is opposed to some other current designs which

Harvey extrusions... simpler, smoother parts for better flight

Improperly installed rivets and bolts have always contributed heavily to the turbulence and drag that downgrade a plane's over-all performance. On light-gage skins, dimples result . . . on medium skins, rivets can be countersunk, but often end up below the desired surface . . . the steel bolts used on heavy skins just can't be shaved to surface smoothness.



Harvey Aluminum Extrusions combine skin, spar, and stiffeners in large panels, virtually eliminate rivets and bolts, thus achieve a degree of aerodynamic smoothness that reduces operating costs and improves performance. And at the same time, assembly is faster, sealing is eliminated, and inspection is simplified.

MAKING THE MOST OF ALUMINUM . . . FOR EVERYONE

Harvey is a leading independent producer of aluminum extrusions in all alloys and all sizes, special extrusions, press forgings, hollow sections, structurals, rod and bar, forging stock, pipe, tube, impact extrusions, aluminum screw machine products and related products. Also similar products in alloy steel and titanium on application.

HARVEY Aluminum

HARVEY ALUMINUM SALES, INC., TORRANCE, CALIFORNIA—BRANCH OFFICES IN PRINCIPAL CITIES



WHAT! AUTOMATE WITH STANDARD MACHINES?

It's true that on low-production jobs a specially built automatic machine tool can take too long to pay for itself. But not so with Baker Basic machines. They cost much less than a machine designed for only one part. What's more, they don't have to be completely "rebuilt" when you have to change your product or production methods. They can be retooled with relative ease and at less expense. Yet you still have full labor-saving automation with loading and unloading devices and conveyors. We'll furnish this equipment as well as tooling if you wish. Use Baker Basics singly or in battery . . . for drilling, boring, facing and other machining operations. In 5 sizes.

BAKER
AUTOMATION
Best in the long run
Practical in the short run

•• Mail Coupon Today ••••

BAKER BROTHERS, INC., Dept. AI-356
Toledo, Ohio
Please send free Catalog on Baker Basic machines.

NAME AND TITLE
COMPANY
ADDRESS
CITY ZONE STATE

have the air spring but also use an external or separate hydraulic shock absorber and separate leveling device.

The shock absorber used in the Monroe air hydraulic suspension is basically a standard unit. The major difference is the adoption of the supercharging effect of the available air pressure. Supercharging the reserve chamber of the shock absorber insures proper loading of the damper under any condition and virtually eliminates "fade" so often encountered in conventional shock absorber applications. The elimination of "fade" coupled with a low frequency spring insures a good ride at all times regardless of road conditions.

With the air spring, movement of the axle with relation to the body produces a volume change which results in a corresponding increase or decrease in air pressure within the unit. In order to obtain a satisfactory deflection rate and oscillation frequency, and in the end result, maximum passenger comfort, it is necessary to provide expansion tanks for the air spring units. Inclusion of the expansion tanks determines the percentage change in volume or pressure as compared to the original. An increase in the size of the expansion tank, up to a certain point, will result in a decrease in frequency.

The expansion tank may be an actual part of the air spring unit or it may be separate from the unit and connected to the air spring by a minimum length of hose or tubing. The exact arrangement depends mainly upon the space available.

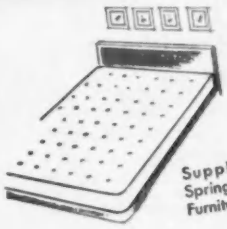
The self-leveling feature of the Monroe air hydraulic suspension system maintains a uniform riding height regardless of the vehicle load. This is accomplished by a built-in leveling device. The leveling valves are so arranged that with an increase in passenger load the inlet valve opens and permits air to flow from the reserve tank into the unit restoring the car body to the equilibrium position. Conversely, with a smaller load, the air pressure within the unit causes the air spring to extend and open the exhaust valve which bleeds air from the unit until the car body again reaches the equilibrium position. The leveling device is adjusted so that most normal movements will not affect these valves.

Of course, one of the primary requisites of an air suspension system is an adequate air supply at a pressure of such a magnitude as to support the loads with a satisfactory safety factor for reserve. The installations which we have made to date have utilized a small compressor

S·O·S

Symbol of Service for 49 years . . .





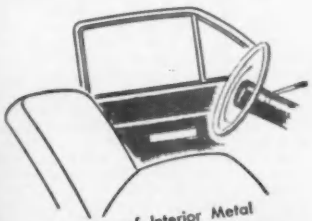
Supplier of Inner Coil Spring Units to Mattress and Furniture Manufacturers.



Supplier of Brake, Clutch, Valve, and Other Mechanical Springs to the Automotive and Other Industries.



Supplier of "Star Service" All Wire and "Paper-Strut" Garment Hangers to Cleaners and Dyers.



Supplier of Interior Metal Trims and Spring Seating Units to the Automotive Industry.



Supplier of Fuselages and Ammunition Components to the Armed Services.



Supplier of Racks and Shelves to the Refrigerator and Stove Manufacturers.

L. A. YOUNG SPRING & WIRE CORPORATION

GENERAL OFFICES: Detroit 11, Michigan

IN CANADA: L. A. YOUNG INDUSTRIES, Ltd., Windsor, Ont.

which is connected to a reserve air supply tank. The compressor is mounted on the engine and is belt driven from the crankshaft. So far, a compressor capable of delivering air at 150 psig pressure appears to be adequate for practically all installations. We are currently using a displacement volume type of compressor which appears satisfactory in all tests to date.

An air reserve tank is couped directly to the compressor. The tank is mounted under the car body and is large enough to insure an adequate air reserve supply for each air spring unit as well as any other air operated devices such as air horns or windshield wiper motors, etc.

The problem of developing a satisfactory ride is at best very complex. At best any ride is a compromise which attempts to take all factors into consideration. This balancing of factors is a matter of judgment on the ride engineer's part due to the almost complete lack of instrumentation for ride evaluation.

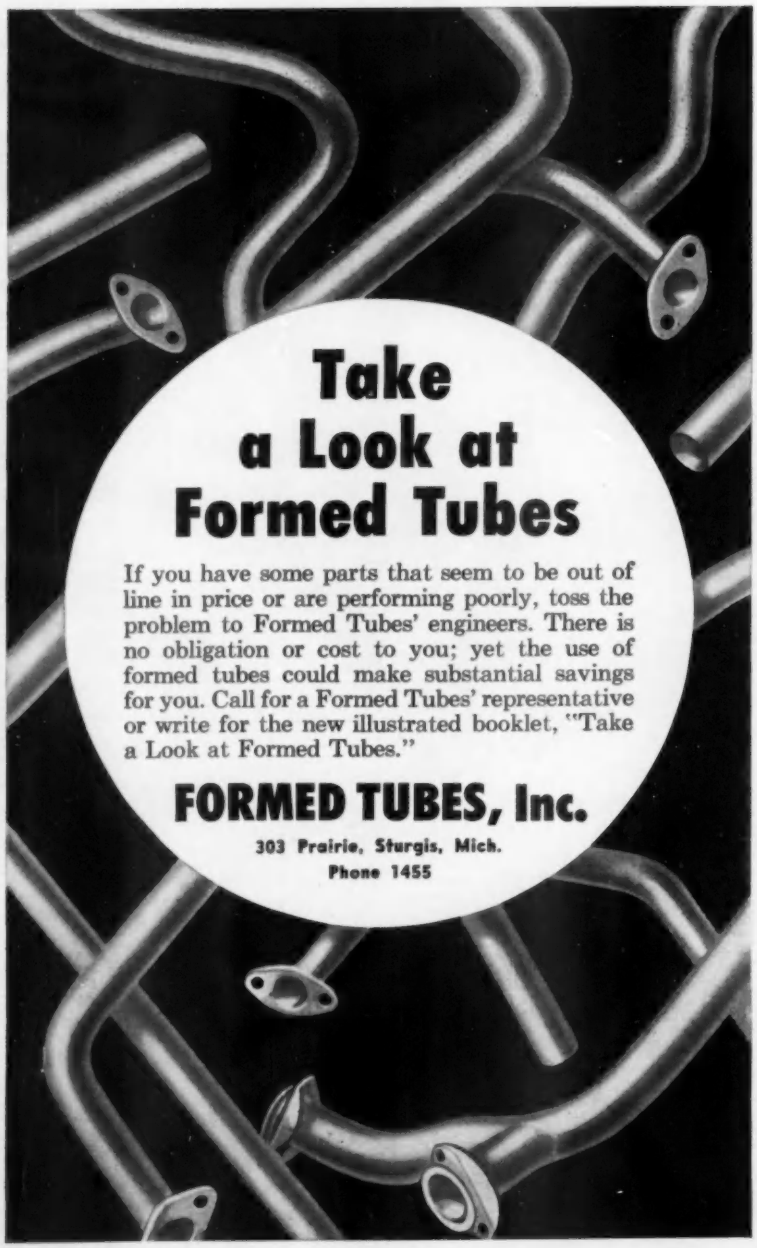
In our development of a ride we try to take all main types of roads into consideration. Boulevard pavement, "swing roads," washboard, gravel, etc., are all used in test work One available stretch of road approximately four miles long combines qualities of many of the above road types.

Test runs have been made over this particular road using cars with standard suspensions and with the air hydraulic suspension.

In all cases the air hydraulic suspension has given a much flatter ride. That is, pitching caused by humps in the roadbed is largely eliminated in vehicles equipped with the Monroe air hydraulic suspension system, expansion joints and other small bumps are virtually unnoticed. The car can be driven over very bad railroad crossings at high speeds without bottoming and without excessive pitching.

A car with a standard suspension driven over the same stretch of road noted above will have almost constant movement. Pitching is most noticeable in the usual ride. Expansion strips generally give the vehicle a little kick which results in a feeling of harshness and passenger movement.

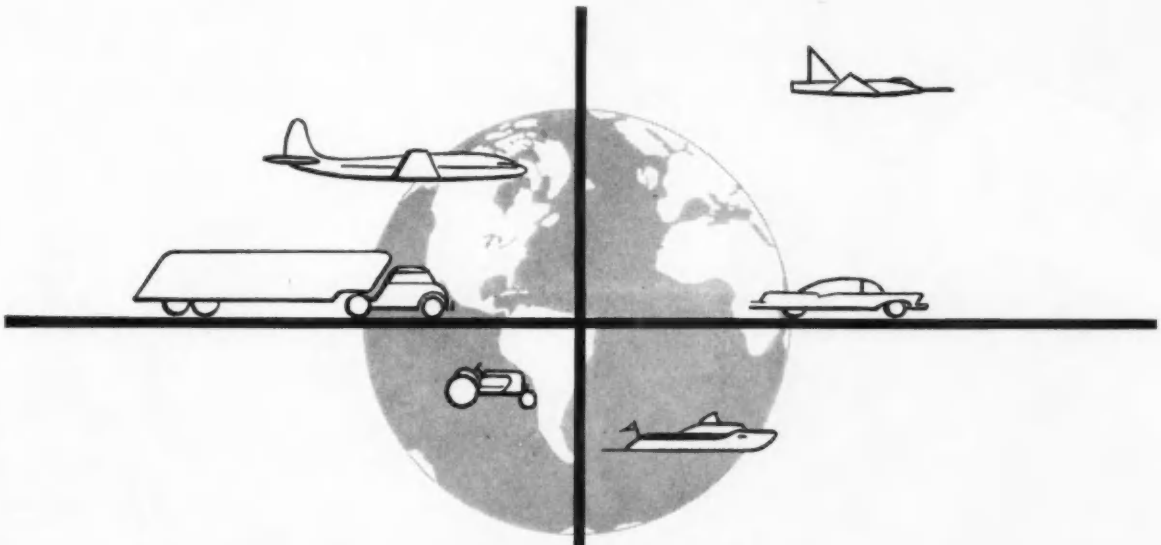
The air hydraulic suspension thus gives much more passenger comfort. Pitching, jerk, and harshness are all effectively reduced. Maintenance of a uniform riding height regardless of load results in additional jounce space and virtually eliminates bottoming with heavy loads. Adoption of this suspension can effect economies in reduction of electrical load and vast increases in passenger riding comfort.



BOOKS . . .

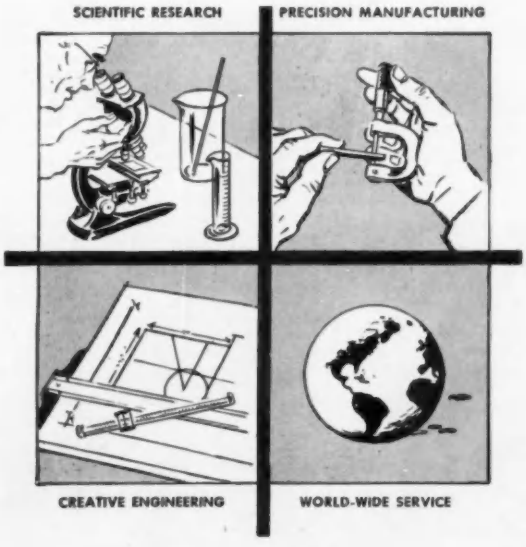
ENGINEERING STANDARDS MULTIPLE V-BELT DRIVES, *published by the Multiple V-Belt Drive & Mechanical Power Transmission Association, 27 E. Monroe St., Chicago 3, Ill., and the Rubber Manufacturers Association, 444 Madison Ave., New York 22, N. Y. Price, $1.00.* Developed and approved by the technical committees of both associations, this revised manual of recommended engineering standards was prepared for the assistance of power users who rely upon multiple vee belts to keep their production machines turning successfully. The data in the manual is based on the latest engineering opinion and research, and indicates the proper sheaves and belts to be used for the attainment of optimum efficiency and economy of the drive with relation to the particular duty to be performed.

AUTOMOTIVE INDUSTRIES
KEEPS YOU INFORMED



AUTO-LITE | Serves Industry

with more than 400 products of the highest quality

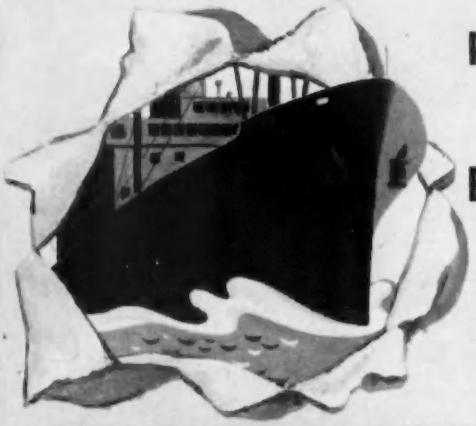


Whether it be intricate die-castings, finely drawn magnet wire, electrical equipment for the automotive industry or any one of hundreds of other products . . . it is of the highest quality when it comes from Auto-Lite. This reputation for quality in 28 plants from Coast to Coast is maintained through central engineering control and is reflected in the public acceptance of the name Auto-Lite . . . and in the world-wide establishment of Auto-Lite service facilities.

THE ELECTRIC AUTO-LITE COMPANY
TOLEDO 1, OHIO

AUTO-LITE

ORCHARD VPI



prevents rust on Borg-Warner

ENGINEERING B-W PRODUCTION

SHIPMENTS TO EUROPE



Step 1—Transmissions on Skids

Step 2—VPI Cover

Step 3—Waterproof Cover

Step 4—Crated for Shipment

Borg-Warner International Corporation, Chicago, Illinois, ships transmissions to Europe for use in Mercedes-Benz, Jaguar, and other foreign cars. Wrapping and packaging for overseas shipments is done in the four simple steps illustrated. The use of Orchard VPI paper prevents rust and corrosion, and helps provide the complete protection that keeps Borg-Warner transmissions in perfect condition for two years or more.

Orchard VPI paper is scientifically manufactured to give off an invisible vapor that prevents rust on all ferrous metal parts and products. It is economical and easy to use for packaging, for shipping, and for storage. It saves time and delivers parts in a rust-free condition ready for resale or installation. Orchard VPI is available in sheets, rolls, bags and shrouds—all shapes and sizes to fit your needs.

This four-step packaging for Borg-Warner Shipment was designed, engineered, and performed by Jerome F. Gould Corporation, export packers of Brooklyn, New York and Detroit, Michigan. VPI paper was purchased through Mid-West Paper Products Company, Detroit. Mid-West Representatives: R. M. Reutlinger & Assoc., Dayton, Ohio; Protective Packaging Co., Chicago, Illinois.

ORCHARD PAPER CO.

3914 N. UNION • ST. LOUIS 15, MISSOURI

OFFICES IN: ATLANTA • CHICAGO • CLEVELAND • DALLAS • INDIANAPOLIS
KANSAS CITY • LOS ANGELES • NEW YORK • SYRACUSE

Write for free VPI samples and brochure. No Obligation

ORCHARD PAPER COMPANY

ORCHARD PAPER CO., Dept. A61
3914 N. Union, St. Louis 15, Mo.

Please send us the Orchard VPI Sample Kit

Firm_____

Requested by_____

Address_____

City and State_____

AUTOMATIC TRANSMISSIONS

(*Continued from page* 183)

We could also take into consideration the market for the amount of oil used by a typical automatic transmission—about 10 qt—and expand that figure 5.6 million times. Just in cars leaving the factory, 14 million gallons of automatic transmission fluids were utilized. There are sundry accessory parts which may accompany the original equipment automatic transmission such as quadrants, light bulbs and housings, pushbuttons, electrical relays, special linkage, etc.

This points out how one technological change, which has gained almost universal acceptance, has expanded our economy in just the past model year. The American car buyer seems to be very happy to let Detroit shift gears for him.

A complete breakdown of the materiel necessary for building transmission and converter assemblies is given in the accompanying table.

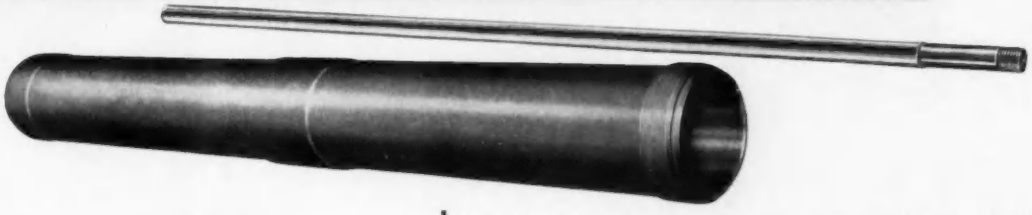
BOOKS . . .

FOUNDRY PRACTICES, *by S. E. Rusinoff, published by American Technical Society, 848 East 58th St., Chicago 37, Ill. Price, $6.50.* In this 255-page book is presented the fundamentals of metal casting for the purpose of enabling interested individuals to obtain a better understanding of foundry practices. Included are chapters on patterns, sand-molding materials and equipment, machine molding, casting and foundry materials, metal handling equipment, metallurgy, testing, and various casting processes.

HYDRAULIC AND PNEUMATIC OPERATION OF MACHINES, *by H. C. Town, published by Philosophical Library, Inc., 15 East 40th St., New York 16, N. Y. Price, $7.50.* A handbook on the use of oil or compressed air for driving and controlling industrial machinery, this publication is intended to provide practical information covering the more recent developments in this field. Part I of the book describes the advantages and limitations of oil for power transmission and shows the principal types of pumps used. Circuit diagrams are included, and applications to various machines, including machine tools and presses, are discussed. Modern accumulator systems are described, then hydrokinetic transmissions. This chapter includes diagrams of fluid couplings and torque converters. Part II, dealing with pneumatic developments, includes chapters on air compressors and structural details; the operation and maintenance of pneumatic tools; and the design of pneumatic circuits. The subject of air-operated jigs and fixtures is discussed, followed by industrial applications of air control of brakes, clutches, conveyors and aircraft components. The book concludes with examples of hydro-pneumatic devices, and describes circuit control design, tracer-controlled copying devices and air-hydraulic feed units.

MICROHONING*...

Efficient Stock Removal
with
LOW-VELOCITY ABRADING





INCREASINGLY, process engineers are recognizing Microhoning's low-velocity abrading technique as a means of combining efficient stock removal with precision.

The Brooklyn Works of American Machine & Foundry Company, in the precision-manufacture of recoil mechanisms for artillery weapons, required a process that would most efficiently remove substantial amounts of stock and generate functional surface characteristics on the I.D. of recoil cylinders and O.D. of piston rods. After extensive study of available methods, AMF selected Microhoning as the most productive and economical process for obtaining desired results.

The floating piston in the recoil cylinder has nitrogen gas on one side and hydraulic oil on the other. Because silver ring seals are used, any error in geometry or roughness of cylinder or rod surfaces will induce deformation or scoring of silver rings and break these important seals.

The largest cylinder processed by AMF to date is for a 75 mm gun and has a bore diameter of 4.750 inches and a length of 46 inches. Piston rods for this gun are 1.375 inches in diameter and 56 inches long. Both I.D. and O.D. operations are on the same Microhoning machine—Model 450 Hydrohoner.

The Microhoning process efficiently removes up to .026 inch of stock from cylinders and .006 inch from rods to correct waviness, taper and out-of-roundness. A geometric tolerance of .0001 inch is held while obtaining a 1.5 microinch finish.

Working closely with AMF manufacturing personnel, Micromatic developed fixtures and tooling that minimize changeover time. The fixture for the cylinder is mounted on an indexing table so it is simply indexed away from the spindle while the rod is being Microhoned. You, too, can solve your precision stock-removal problems through application of Microhoning—the low-velocity abrading process.

For further information write for CROSS-HATCH, Vol. 7 No. 5

***MICROHONING =**
Stock Removal + Geometry + Size Control + Surface Finish

MICROMATIC HONE CORPORATION

8100 SCHOOLCRAFT AVENUE • DETROIT 38, MICHIGAN

F.O.S. INDUSTRIAL TAPE
REG. U. S. PAT. OFF.

NOW—
Industrial Tape
from Atomic
Research



Quality Controlled
by the Strontium 90
Isotopic Process

F.O.S. is processed to provide uniformity of product *and* performance, controlled by the unique Strontium 90 Process.

Denser, smoother, more consistent adhesive coating. Try it. Write on your letterhead for *free* F.O.S. samples.

Copyright 1955 The Seamless Rubber Co.

F.O.S. INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONNECTICUT

SEAMLESS

BUSINESS PULSE

(*Continued from page* 386)

commencement of the year. Automotive operations had been pushed to extremely high levels in November and early December.

Comparatively moderate customer response to the new model cars, however, led to a rapid increase in dealers' inventories; this, in turn, caused a cutback in production rates.

Not only has 1956 output been lagging in comparison with early 1955 performance, but the trend has been for output to slide back progressively from week to week. Since inventories are believed to be above 800,000 units, there is a good deal of doubt as to just when the production curve will turn into a rise again.

The recent recession in residential construction is the second most cloudy feature of the business situation at present. Nevertheless, it appears that the decline may be losing momentum. The downtrend in actual spending on private new residential construction put in place was still continuing as late as January.

Other indicators are more encouraging. Private non-farm housing starts showed little change from December to January, in contrast to declines throughout 1955. Furthermore, both applications for FHA mortgage commitments and requests for VA appraisals rose in January from the December rate to reverse the earlier downward tendency. The Council of Economic Advisers has characterized the rise in financing applications as of more than seasonal proportions.

The situation in steel apparently supports the view that the boom still has many diversified features of strength. The hectic demand for steel has not been fundamentally weakened by order cancellations and "shipping deferments" by automobile manufacturers. Other users have quickly asked for the freed tonnages.

This pattern suggests that a kind of "rolling adjustment" is occurring in the economy. Many industries appear ready to fill any gaps which may develop.

One qualification should be made, however. It may be that some portion of the current demand for steel reflects the building of inventories as a hedge against the possibility of a steel strike around midyear and the generally expected increase in steel prices.

(*Turn to page* 419, *please*)


SUPERIOR stainless strip steels
precise in composition
uniform in handling ease
versatile in application
You can depend upon the fine behavior of Superior Stainless Strip Steels—every step of the way from initial uncoiling in your plant to long and satisfactory product service in the hands of your customers. • We build precise uniformity into every Superior grade: each grade has its specific and profitable field of applications. Let us cooperate on your needs!
Superior Steel
CORPORATION
CARNEGIE, PENNSYLVANIA

The World's Leading Manufacturers of FUEL INJECTION EQUIPMENT *for Diesel Engines*



C.A.V.

Depots and Service Agents in over 100 Countries

C.A.V. DIVISION OF LUCAS ELECTRICAL SERVICES INC., 653, TENTH AVENUE, NEW YORK, 36, N.Y.
Sales Office: 14820 DETROIT AVENUE, CLEVELAND, 7, OHIO.

AP 174-754

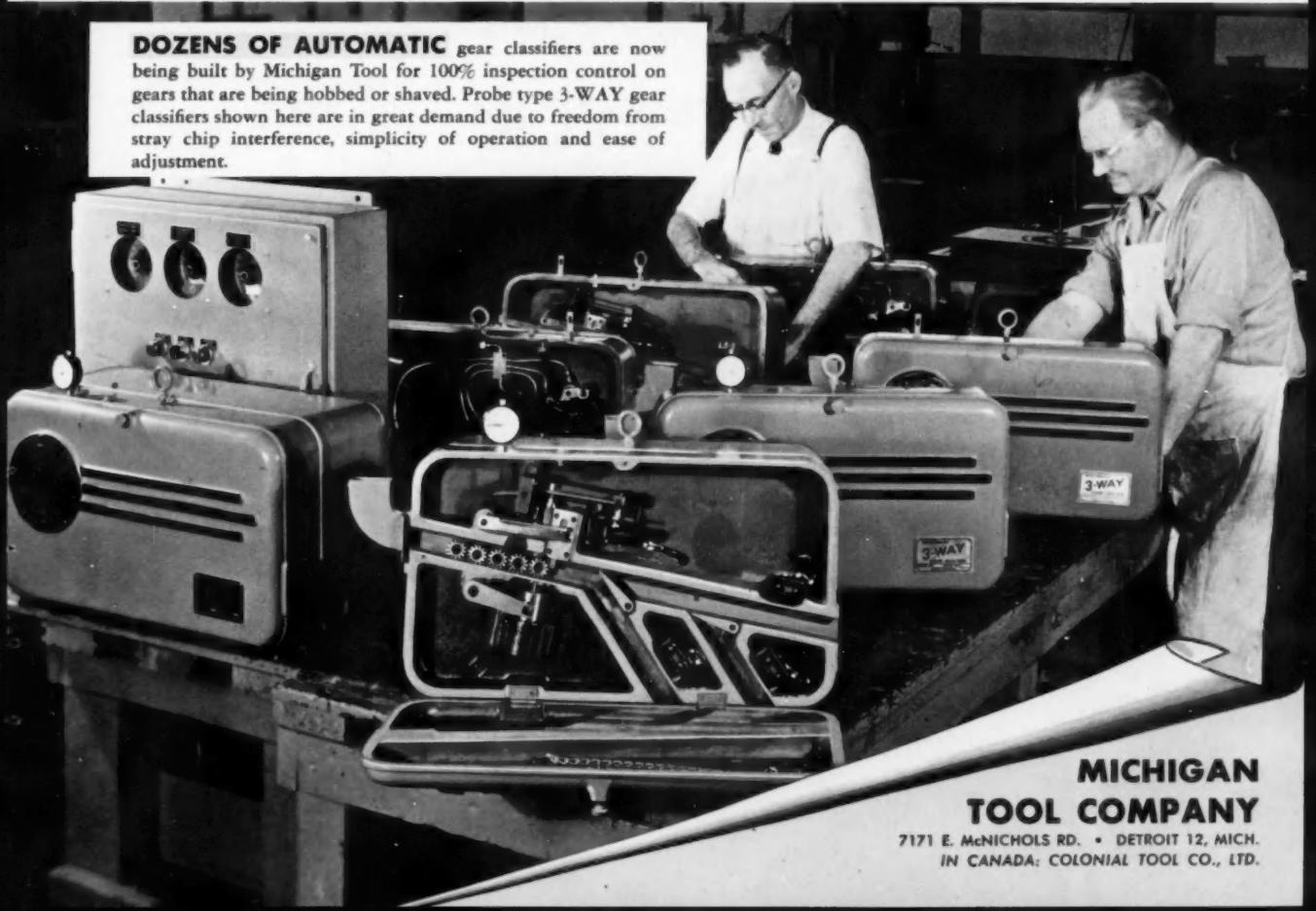
This Month's

GEAR PIX



OVER TWO MILLION rear axle shaft splines have been cold formed in a large automotive plant on a battery of three automatic Roto-Flo spline rollers. Production rate for the 28-tooth, 24/48 diametral pitch splines is 270 per hour on each machine. Tool life is about 150,000 parts per grind.

DOZENS OF AUTOMATIC gear classifiers are now being built by Michigan Tool for 100% inspection control on gears that are being hobbed or shaved. Probe type 3-WAY gear classifiers shown here are in great demand due to freedom from stray chip interference, simplicity of operation and ease of adjustment.



MICHIGAN TOOL COMPANY

7171 E. McNICHOLS RD. • DETROIT 12, MICH.

IN CANADA: COLONIAL TOOL CO., LTD.

This Month's

GEAR PIX





VERSATILE SHEAR-SPEED gear shaper shown here cuts 32 different parts for lift truck transmissions and hoists. Production time is reduced as much as 78%, changeover time is about the same as previous methods. Shown are some of the 32 gears, ratchets, sprockets and splines ranging up to 7 inches in diameter, that are being cut. Parts produced per tool sharpening range from 172 to 1200.

MICHIGAN TOOL COMPANY

7171 E. McNICHOLS RD. • DETROIT 12, MICH.

IN CANADA: COLONIAL TOOL CO., LTD.

FRONTIER 40-E Aluminum Alloy

Improves with Age

FRONTIER 40-E Aluminum Alloy			
TIME AGED	YIELD STRENGTH	TENSILE STRENGTH	ELONGATION
21 days	25,440	34,400	5.1
2 years	31,300	39,300	4.5
2½ years	30,650	39,050	4.5
3 years	29,400	37,900	4.0
4½ years	30,075	38,000	3.75
8 years	31,550	37,025	5.5

The above figures were derived from 12 sample casts made over a period of 8 years. Figures shown are the average of all the samples in each group.

As shown in the table at the right, castings made of Frontier 40-E Aluminum Alloy grow stronger as they age without brittleness or loss of elongation. Yes, parts made of Frontier 40-E actually grow stronger while in use! Frontier 40-E is the outstanding high-strength aluminum alloy, due to a unique metallurgical formula. Frontier 40-E is an aluminum alloy containing zinc with magnesium, titanium, and chromium as added ingredients that result in great strength and absence of brittleness without special and costly heat treatment. It has been proven by extensive tests that "40-E" reaches stability at room temperature. After this stabilization has taken place there is little further change either to increase or decrease physical values. Frontier 40-E Aluminum Alloy is also Shock Resistant; Corrosion Resistant, even under stress; has excellent machineability; is fine grained for Pressure Tightness.

Technical advice and service is available to designers and licensees.

Please send me a copy of the Alloy Data Book giving engineering and metallurgical facts on the physical properties of Frontier "40-E".

Name.....

Company.....

Address.....

City.....

State.....





FRONTIER BRONZE CORPORATION

4885 PACKARD ROAD, NIAGARA FALLS, NEW YORK

Expensive parts machined to close tolerances are always in danger of being scratched by jagged chips hiding in the weave of ordinary wiping material. Parts so damaged have to be reworked . . . sometimes scrapped entirely.

This wiping job could cost $50



They're easy to distribute . . .



They really soak up oil . . .



Always a clean one handy . . .



Just toss 'em in the trash . . .



When you use Scott Wipers, chips don't come back to scar men and metal . . . there's always a clean new wiper handy. You use one thoroughly and throw it away. No more expensive collection, sorting, laundering and distribution.

. . . this one cost less than ½¢

The Difference is . . . Scott Wipers

Strong, highly absorbent Scott Wipers can be used and reused. Yet they cost so little you can throw them away after a single use when the job calls for a clean wiper, free of chips and abrasive material.

Scott Wipers are reducing the cost of wiping in many companies. Sorting and baling are eliminated. Handling and distribution are simplified. Laundering becomes a thing of the past.

This is sanitary wiping. A man uses a Scott Wiper thoroughly, throws it away—takes a new one. No danger of cuts from hidden chips . . . no fear of skin infection from dirty wipers.

Put the Scott Wiper through its paces on your production line. Your local Scott representative or distributor is ready to demonstrate any time you say. Call today or mail this coupon.

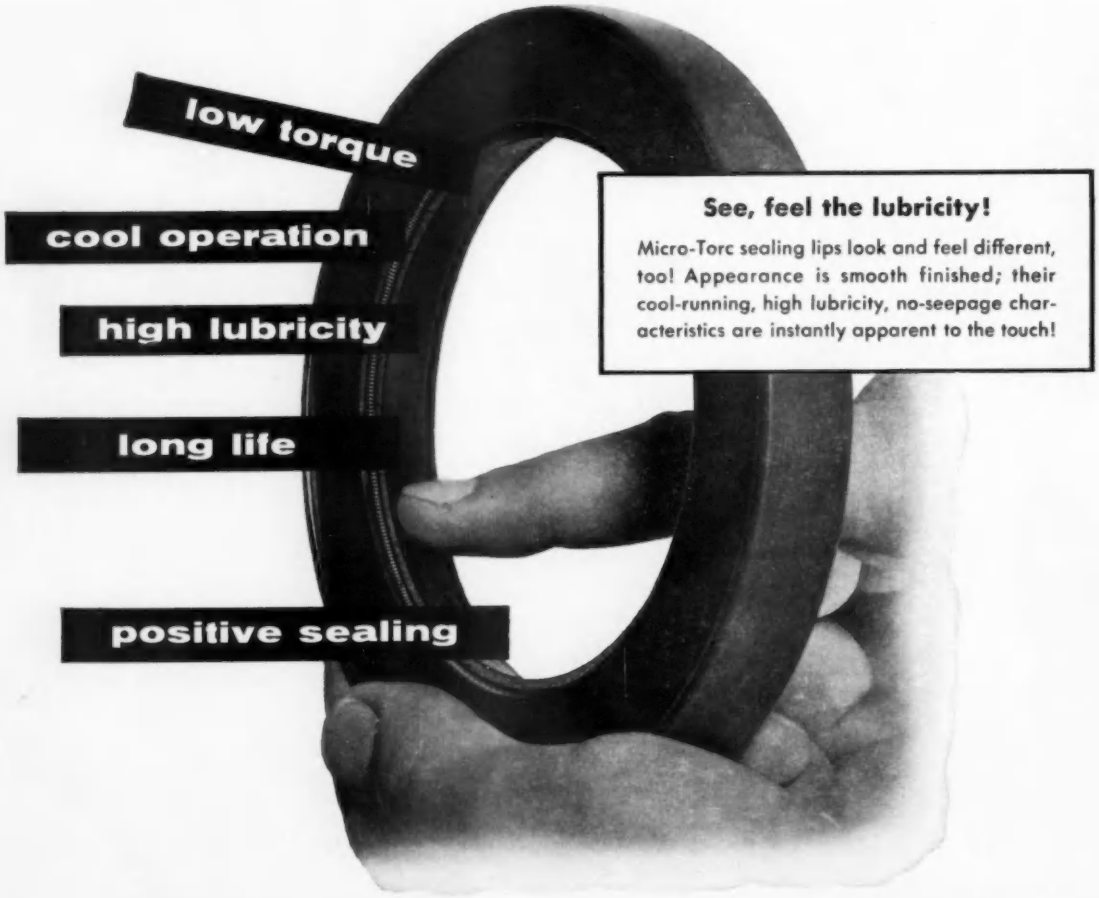
SCOTT PAPER COMPANY
Dept. W-1, Chester, Pa.
Please send me more information about Scott Wipers.

Name_____

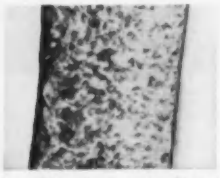
Company_____

Position_____

Address_____



NATIONAL MICRO-TORC* LEATHER OIL SEALS



How Micro-Torc works—Side of chrome retanned leather lip is coated with dry lubricant and elastomer. Elastomer binds lubricant to leather, prevents seepage through leather, enhances mechanical stability—yet permits leather's natural porosity to remain in body of sealing lip. Lip actually stores oil for dry or emergency running!

For applications where temperatures are within —50° to 200° F, maximum shaft speed is 2,000 fpm, and runout is held to about 0.005", new National Micro-Torc oil seals should definitely be investigated.

The Micro-Torc sealing member is perhaps the most interesting advance in leather oil seals in 15 years. In hundreds of thousands of hours of actual application, Micro-Torc seals have consistently shown up to 80% less torque and 10 times the life of other leather seals. Breakaway torque is normally only 20% of conventional leather seals, and Micro-Torc seals have operated up to 100 hours dry at 1,350 rpm without sloughing or squealing. Properly used, Micro-Torc seals provide positive sealing throughout service life.

Get complete details. Call nearest NMB Engineer, or write for Bulletin.
Engineering help in your plant and ours. NMB'S Application Engineering Service is fast, expert, convenient. Yours for the asking:

CHICAGO, ILL. . . . . *Room 462 McCormick Building, HArrison 7-5163*
CLEVELAND, OHIO . . . . . *210 Heights Rockefeller Bldg., YEllowstone 2-2720*
DALLAS, TEXAS . . . . . *2520 West Mockingbird Lane, DIxon 7541*
DETROIT, MICH. . . . . *13836 Puritan Avenue, VErmont 6-1909*
DOWNEY (Los Angeles Co.), CALIF. . . . . *11634 Patton Rd., TOpaz 2-8163*
INDIANAPOLIS, INDIANA . . . . . *2802 North Delaware Street, WAlnut 3-1535*
KANSAS CITY, MO. . . . . *4445 Terrace, LOgan 6622*
MILWAUKEE, WIS. . . . . *647 West Virginia Street, BRoadway 1-3234*
NEWARK, N. J. . . . . *1180 Raymond Blvd., MItchell 2-7586*
REDWOOD CITY, CALIF. . . . . *Broadway and National, EMerson 6-3861*
WICHITA, KANSAS . . . . . *519 South Broadway, AMherst 2-6971*

*T. M. REG.

NATIONAL
OIL & GREASE SEALS
O-RINGS SHIMS
Product of the world's largest exclusive manufacturer of oil seals

3675

NATIONAL MOTOR BEARING CO., INC.
Plants at Van Wert, Ohio, Redwood City, Downey and Long Beach, Calif.
General Offices: Redwood City

THEY'RE *Really* JUDGING

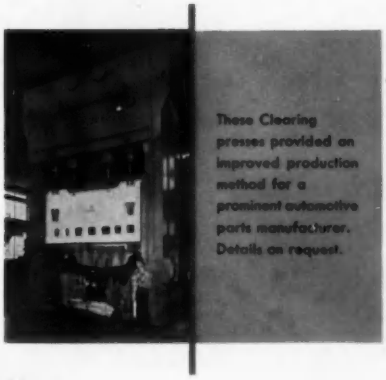
YOUR PRODUCTIVE EFFICIENCY



When people are deciding what they want to put out their hard-earned money for, they take a pretty careful look and make tough-minded comparisons. What they're really judging, perhaps without consciously thinking of it that way, is the ability of the manufacturer to produce efficiently. Other factors being equal, the manufacturer who can put more into his product for the money gets the biggest share of the nods.

LET CLEARING HELP YOU MODERNIZE FOR HIGHEST EFFICIENCY

If your product is made from stamped metal parts, Clearing engineers can help you produce at a lower cost. They'll tell you about recently developed presses, that run twice as fast as conventional machines, they'll discuss methods of cutting down in-process material handling. To meet the challenge of tomorrow's market place, modernize your manufacturing setup with truly modern equipment. Call a Clearing man today. Clearing Machine Corporation, 6499 West 65th Street, Chicago 38, Illinois. Hamilton Plant, Hamilton, Ohio.



These Clearing presses provided an improved production method for a prominent automotive parts manufacturer. Details on request.



Write for Clearing brochure "Thinking of a better way to do the job?"

CLEARING PRESSES THE WAY TO EFFICIENT MASS PRODUCTION

CLEARING MACHINE CORPORATION *Division of U. S. INDUSTRIES, Inc.*



air-conditioned cover keeps new clutch c-o-o-l

Frictional heat has little effect on the new *Lipe* Direct Pressure Clutch. Air circulating through the cover's 33 ventilating holes dissipates heat rapidly. The result is a heavy-duty clutch singularly free of burned facings and warped pressure plates. A clutch whose low maintenance cost matches its low first cost.

Lipe Direct Pressure Clutches now available: 13", 14", 15" single-plate, 14" and 15" two-plate. Send for complete information.

For the name of your nearest Authorized Lipe Distributor, look under "Clutches" in your telephone directory. Or, write us.

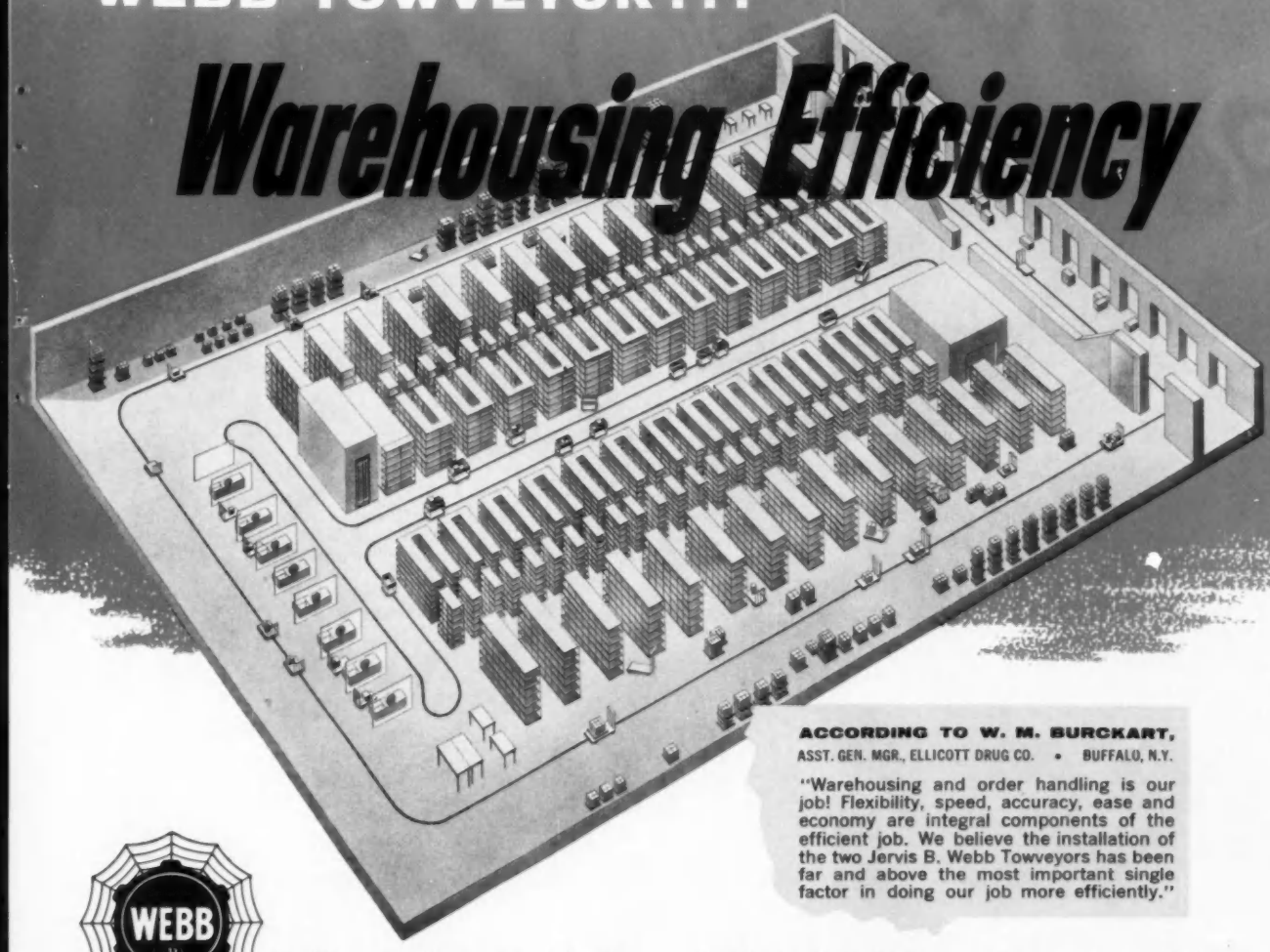
Manufacturers of Automotive Clutches & Machine Tools

LIPE ROLLWAY

Lipe-ROLLWAY CORPORATION SYRACUSE 1, N. Y.

WEBB TOWVEYOR*...

Warehousing Efficiency



ACCORDING TO W. M. BURCKART,
ASST. GEN. MGR., ELLICOTT DRUG CO. • BUFFALO, N.Y.

"Warehousing and order handling is our job! Flexibility, speed, accuracy, ease and economy are integral components of the efficient job. We believe the installation of the two Jervis B. Webb Towveyors has been far and above the most important single factor in doing our job more efficiently."

The Ellicott Drug Company—wholesale druggist in Buffalo, N.Y.—services hundreds of drug stores in Northwestern Pennsylvania and Western New York State. They warehouse well over 30,000 items. This warehousing job, combined with the need for rapid filling of complex orders, could present a difficult materials handling problem. But it doesn't.

Two Webb Towveyors . . . totaling almost ½ mile in length . . . have contributed greatly to the simplification and increased efficiency of their warehouse operation. Since installing the Webb Towveyors, order handling volume has increased. Orders are now filled at the rate of one order every two minutes. In emergencies, this pace can be increased.

A continuous Towveyor line runs around the perimeter of the warehouse serving two purposes, (1) delivering goods from the receiving dock to the storage area, and (2) delivering completed orders from the packing tables to the shipping dock. This conveyor line also moves rubbish to the incinerator . . . often a warehousing problem. The second Towveyor line runs in a continuous "T" shaped circuit through the center area of the warehouse between two long banks of stock-storage shelves . . . 55,000 sq. ft. of shelving . . . and to the packing area. This line is used by order clerks to fill quickly odd-lot customer orders for shipment or pick-up.

Towveyors are underfloor chain conveyors using standard trucks with tow-pin attachment. The typical simplicity of the Ellicott system; the absence of surging and rocking motion; the fast, dependable, silent and clean operation . . . necessary for this type of warehousing . . . are the prime reasons why Ellicott considers Towveyors the utmost in efficient materials handling.

Let Webb engineers show you how a Towveyor system can bring you added profits and better materials movement . . . whether your operation is a warehouse or a production plant.

Visit us at: Material Handling Institute's Exposition . . . Cleveland, June 5-8, 1956 . . . Booths 110, 112, 209 and 211

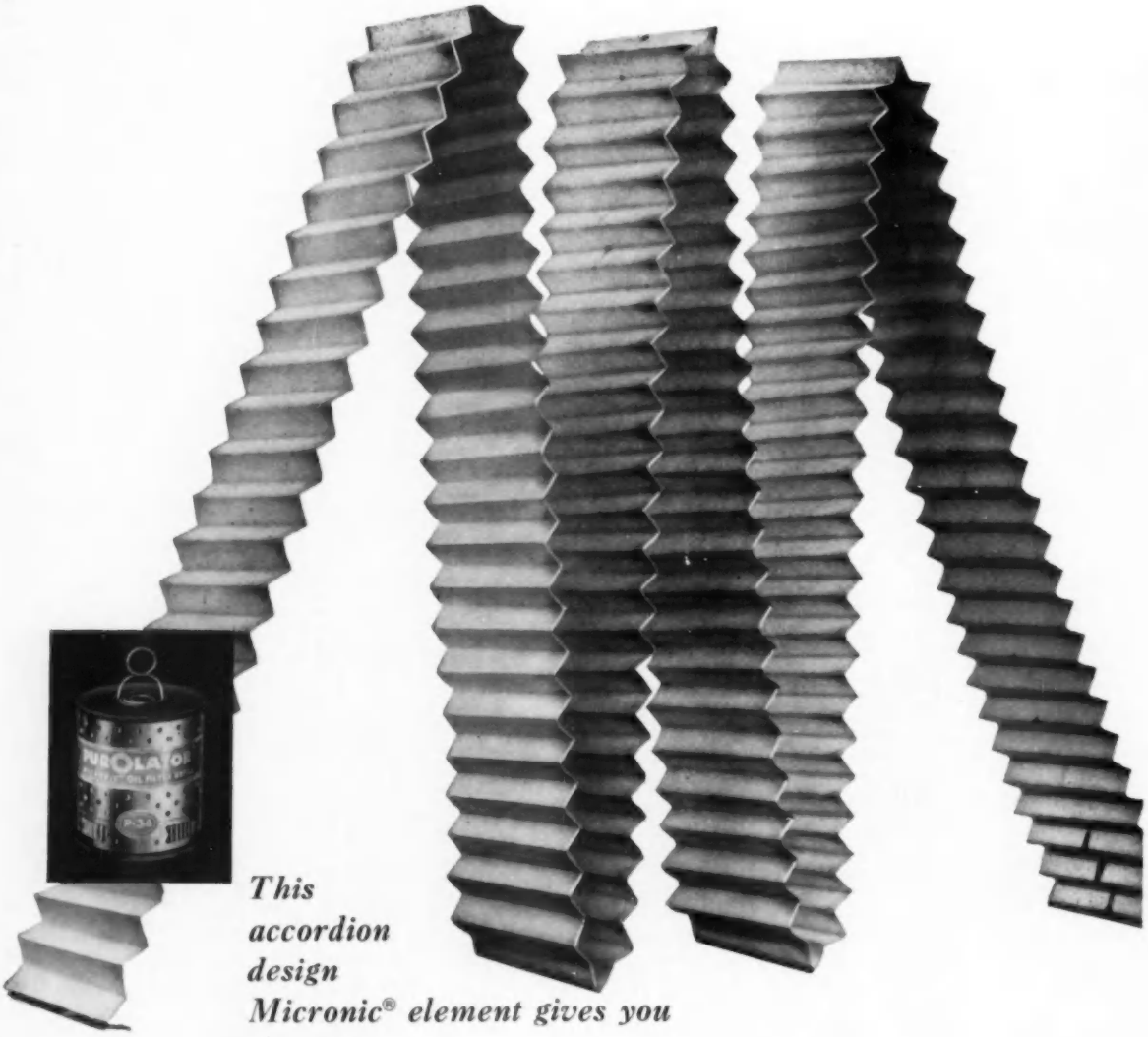
****Towveyor is a registered trademark, identifying floor truck conveyors, patented, manufactured and installed by the Jervis B. Webb Co.***

JERVIS B. WEBB CO.

Specialists in Custom Conveyor Systems

8937 ALPINE AVENUE • DETROIT 4, MICHIGAN

OFFICES AND REPRESENTATIVES THROUGHOUT THE WORLD • FACTORIES: DETROIT • LOS ANGELES • ATLANTA • HAMILTON, ONTARIO, CANADA



This accordion design Micronic® element gives you

10 times more filtration area for full engine protection

Pull out Purolator's accordion design and you'll see how Purolator packs 10 times more filtration area into its element than most filters. You'll find it provides maximum filtering area in minimum space, assuring *full* engine protection as no other filter does.

Controlled porosity of Purolator's Micronic® element filters out particles as small as .000039 of an inch, yet never removes costly additives in heavy-duty or detergent oils and never channels. The Micronic® element, made of plastic-impregnated cellulose, isn't affected by engine temperature, crankcase dilution, or water.

Engine manufacturers have proved time and time again that these wear-reducing features make an engine perform better and last longer. Find out how they can do the same job for you. Write for our new 32-page "Filtration Manual for Product Designers"—and please enclose 25¢ to cover postage and handling. Address Dept. A4-316.

PUROLATOR

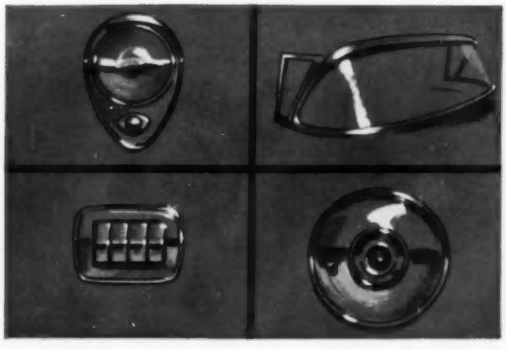
"FIRST IN THE FIELD OF FILTERING"

PUROLATOR PRODUCTS INC., Rahway, N. J., and Toronto, Ontario, Canada

modern design specifies stainless steel



McLouth
STAINLESS
Steel
for automobiles



The beautiful bright molding and trim that style your car are made of non-corrosive, easy to clean Stainless Steel. Designers of automobiles and hundreds of other products specify Stainless Steel for its many valuable properties.

For the product you make today and the product you plan for tomorrow specify McLouth high quality sheet and strip Stainless Steel.



McLouth Steel Corporation
Detroit, Michigan

MANUFACTURERS OF STAINLESS AND CARBON STEELS

CLEVELAND *Top Quality* FASTENERS



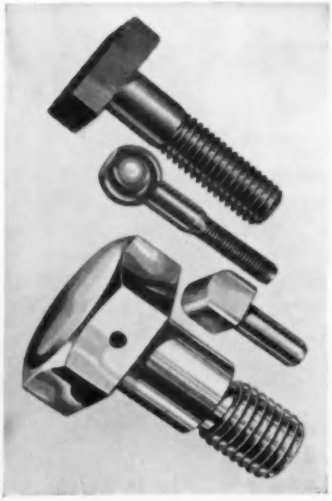
Standard Types—*always ready for you*

Standard Cap Screw types, Set Screws and Milled Studs of highest quality have been CLEVELAND's specialty for forty years. Designers and production men recognize the advantages and economies in using these well-made products for dependable speedy assembly.

Available in ferrous and non-ferrous metals: bright, high carbon and alloy steels—heat treated, brass, silicon bronze, aluminum and stainless steel.

Hex Head Cap Screws: ¼" to 2½" dia.
Socket Head Cap and Set Screws—Plain and Knurled: ¼" to 1½" dia. Also Flat and Button Head Styles.
Flat Head Cap Screws: ¼" to 1" dia.
Fillister Head: ¼" to 1" dia.
Set Screws—Square Head: ¼" to 1½" dia.
Milled Studs: ¼" to 1¼" dia.
Place Bolts: ¼" to 1¼" dia.
Structural Bolts to ASTM Specification A325
Tractor Bolts
Facilities to make larger diameters than listed.

Write the factory or ask your jobber for CLEVELAND *Fasteners.*



Special Types—*to your design and "specs"*

It just might pay you to take a good look at the special parts you're buying that could be made more economically by CLEVELAND's hot heading or cold extrusion processes.

CLEVELAND pre-forms your non-standard parts for further shaping and machining in your plant or manufactures them complete, ready for your assembly line.

You can save yourself tooling and machine time. Take a look at what CLEVELAND offers — engineering skill and experience in applying high production methods and machines to your problems. Write for folder, "Specials by Specialists."

The Cleveland Cap Screw Company

2955 East 79th Street • Cleveland 4, Ohio • VUlcan 3-3700 TWX CV42

Warehouses: Chicago • Philadelphia • New York • Providence • Los Angeles

Sales Representatives in All Principal Cities

Originators of the Kaufman DOUBLE EXTRUSION Process

BUSINESS PULSE

(*Continued from page* 404)

Monetary Policy Shift Ready

This new interfusion of favorable and unfavorable elements in the economy raises the question of whether any change in monetary policy should be expected in the near future. On this score, it is significant that monetary officials themselves acknowledge that they are currently feeling their way.

Federal Reserve Chairman William McChesney Martin recently told a Congressional committee that he is uncertain just how business will develop over the next few months. He went on to say that the Board's policy "will be one of leaning against the wind, whichever way it blows."

The above statement may be said to underscore the heightened aspect of uncertainty in some quarters regarding the business scene. At the same time, it provides renewed assurance that the Federal Reserve will act to stabilize the level of business as soon as any definite trend emerges.

BOOKS . . .

INDUSTRIAL STORESKEEPING MANUAL, *by Benjamin Melnitsky, published by Chilton Co., Chestnut and Fifty-sixth Sts., Philadelphia 39, Pa. Price, $6.00.* Dealing in terms of actual company practices with how stores department costs can be reduced, how efficiency can be increased, and how modern techniques of management can be applied in stores operations, this 265-page book will be a valuable reference to those interested in the storeskeeping phases of industrial plant operations. Standards in storeskeeping, identification procedures, records and forms, layout of storage areas, materials handling, and physical inventory are among the subjects covered in seventeen chapters.

1955 COLLECTED TECHNICAL PAPERS, *published by American Society of Tool Engineers, 10700 Puritan Ave., Detroit 38, Mich. Price, $5.00.* A leatherette bound volume, comprising 347 pages, contains all of the papers and panel discussions presented at the 23rd annual convention of the ASTE in Los Angeles. It covers 16 lectures, four panels and an ASTE Research Fund report on workpiece temperature distribution, amounting to a total of 36 papers. Subjects discussed include the use of magnesium for low-cost tooling, coding and classification systems, cold steel extrusion tooling, ceramic parts and tooling for mechanical applications, heat treating steel and aluminum, equipment leasing, and the setting of automation goals. Plastic tooling for production, preparing engineers for manufacturing responsibilities, coordination of manufacturing management, and quality control through realistic tolerances are the subjects of the four panels.

newest
what's ~~new~~ in electronics?

You'll find it in this

Free Book



This brand-new book is your 1956 guide to the latest advancements to come from the expert electronic engineering and production staffs of Thompson, offering you the most modern facilities to help solve your every electronic problem.

Electronics Division
Thompson Products
2196 CLARKWOOD ROAD
CLEVELAND 3, OHIO

FILL THIS OUT AND MAIL IT *Today!*

ELECTRONICS DIVISION, DEPT. AI-3
THOMPSON PRODUCTS
2196 Clarkwood Road
Cleveland 3, Ohio

Please send me a FREE copy of "Electronics Advancement".

Name _____ Title _____
Company _____
Address _____
City _____ Zone ___ State _____

DIRECTORY OF MANUFACTURERS

(*Continued from page 286*)

CITY AND INTERCITY BUSES

For details of their products see pages 162-163.

C. D. BECK & CO., Inc., Sidney, Ohio.
CROWN Coach Corp., Los Angeles 21, Cal.
FITZJOHN Coach Co., Muskegon, Mich.
FLXIBLE Co., Loudonville, Ohio.
FLXIBLE-TWIN COACH, see Fixville Co.
GMC Truck & Coach Div., General Motors Corp., Pontiac 11, Mich.
MACK Manufacturing Corp., New York 1, N. Y.
SOUTHERN COACH Mfg. Co., Inc., Evergreen, Ala.

AMERICAN TRACTORS

For details of their products see pages 164-169.

ALLIS-CHALMERS Mfg. Co., Milwaukee 1, Wis.
American Tractor Corp., Churubusco, Ind.
BROCKWAY Tractor Co., Chagrin Falls, Ohio.
J. I. CASE Co., Racine, Wis.
CATERPILLAR Tractor Co., Peoria 8, Ill.
COCKSHUT Farm Equipment Ltd., Brantford, Canada.
JOHN DEERE Waterloo Tractor Works, Deere Mfg. Co., Waterloo, Iowa.
JOHN DEERE Dubuque Tractor Works, Deere Mfg. Co., Dubuque, Iowa.
EARTHMASTER Farm Equipment, Sun Valley, Cal.
EUCLID Div., General Motors Corp., Cleveland 17, Ohio.
FERGUSON, see Massey-Harris-Ferguson.
Tractor & Implement Div., FORD Motor Co., Birmingham, Mich.
FRIDAY Tractor Co., Hartford, Mich.
INTERNATIONAL Harvester Co., Chicago 1, Ill.
LIFT Tools Div., Love Mfg. Co., Eau Claire, Mich.
MASSEY-HARRIS Div., Massey-Harris-Ferguson Inc., Racine, Wis.
Massey-Harris-Ferguson Inc., Detroit 32, Mich.
McCORMICK, see International Harvester Co.
McCORMICK FARMALL, see International Harvester Co.
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
OLIVER Corp., Charles City, Iowa.
OLIVER Corp., Cleveland 17, Ohio.
OLIVER Corp., Plant #2, South Bend 21, Ind.
R. H. SHEPARD Co., Inc., Hanover, Pa.
TERRATRAC, see American Tractor Corp.
TIGER Tractor Corp., Keyser, W. Va.

U. S. CIVIL AND MILITARY AIRCRAFT

For details of their products see pages 240-241, 244-245.

AERO COMMANDER, see Aero Design and Engineering Co.
Aero Design and Engineering Co., Bethany, Okla.
BEE Aviation Associates, Inc., San Diego 9, Cal.
BEECH Aircraft Corp., Wichita 1, Kan.
BELLANCA Aircraft Corp., New Castle, Del.
BOEING Airplane Co., Seattle 14, Wash.
CALL AIR, Afton, Wyo.
CESSNA Aircraft Co., Wichita, Kan.
CHANCE VOUGHT Aircraft, Inc., Div., United Aircraft Corp., Dallas, Tex.
COLONIAL Aircraft Corp., Sanford, Me.
CONVAIR Div., General Dynamics Corp., San Diego 12, Calif.
DOUGLAS Aircraft Co., Inc., Santa Monica, Calif.
FAIRCHILD Aircraft Div., Fairchild Engine & Airplane Corp., Hagerstown, Md.
FLETCHER Aviation Corp., Rosemead, Cal.
GRUMMAN Aircraft Engineering Corp., Bethpage, L. I., N. Y.
HELIO Aircraft Corp., Norwood, Mass.
LOCKHEED Aircraft Corp., Burbank, Calif.
The Glenn L. MARTIN Co., Baltimore 3, Md.
McDONNELL Aircraft Corp., St. Louis 3, Mo.
MOONEY Aircraft, Inc., Kerrville, Tex.
NORTH AMERICAN Aviation, Inc., Los Angeles 45, Calif.
NORTHROP Aircraft, Inc., Hawthorne, Calif.
PIPER Aircraft Corp., Lock Haven, Pa.
REPUBLIC Aviation Corp., Farmingdale, L. I., N. Y.
STITS Aircraft, Riverside, Cal.
TAYLORCRAFT, Inc., Conway, Pa.
TEMCO Aircraft Corp., Dallas 2, Tex.

FOREIGN CIVIL AND MILITARY AIRCRAFT

For details of their products see pages 241-243, 245-246.

(*Turn to page 422, please*)

Specialized Production of
HARDENED & GROUND PARTS



When you've served the automotive industry for more than 40 years as we have done, you become quite adept at machining difficult pieces like the Beam Ball shown here.

Ball O.D. is ground to 3.375" ±.001; Bore, to 1.375" ±.001. Circular contour is absolutely concentric with bore centerline. Scientifically controlled heat treating provides exceptional surface hardness and consistent strength throughout. The specified finish is Parker-Lubrizing, as used on many of our products.

This is a sample of the metallurgical engineering, precision grinding and uniform quality that can be readily applied to mass production of your turned, hardened and ground parts. Let us quote on your requirements. Write or wire today.

Experienced production on:
King Pins
Shackle Bolts
Shackle Pins
Brake Anchor Bolts
Countershafts
Idler Shafts
Stub Axle Shafts
Steering Ball Bolts
Beam Balls and Bolts
5th Wheel Rocker Shafts
Wheel Studs
Water Pump Shafts
. . . anything in the hardened and ground line, of any analysis steel, up to 4 1/2"

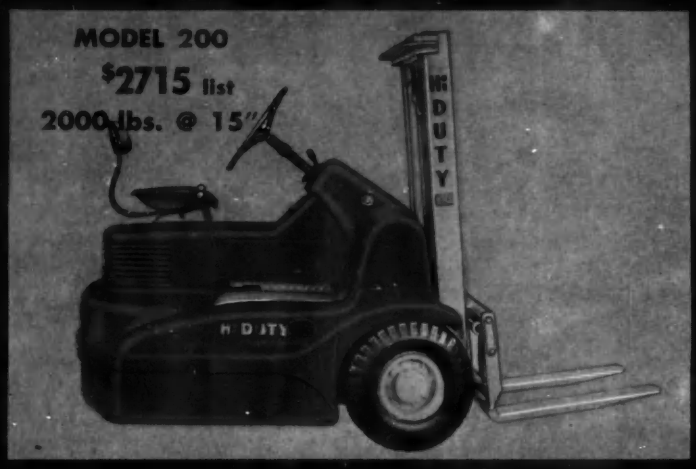
Henry W. Brown
PRESIDENT

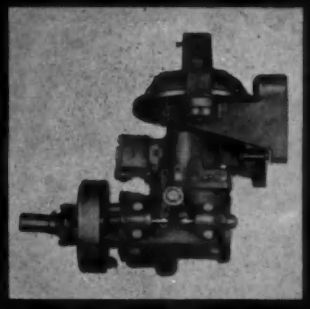
THE BROWN CORP.

213 BELLEVUE AVE. SYRACUSE, N. Y.

C. H. Eifert, 3407 Clarendon Rd., Cleveland • N. F. Spring, 4716 Balfour Rd., Detroit • B. C. Sanderson, 5651 N. Ashland Ave., Chicago • Harry J. Windmiller, 1704 Carlton, Fort Worth • Lyle H. Johnson, 1360 Westwood Blvd., Los Angeles, Calif. • John B. Hunt, 5811 S.E. Yamhill St., Portland, Ore.

HiDUTY





Hydroflex Clutch and
Duo-Drive Transmission



Today, competition in the lift truck field is keen. We strive to make it keener with more quality . . . more sound features the user needs . . . and prices as low as possible. Write or phone today for detailed information.

HiDUTY LIFT TRUCKS — *Manufactured by*

TRANSITIER TRUCK COMPANY

5475 N. Lagoon Ave., Swan Island • Phone BUtler 5-4519 • Portland 11, Oregon

LOWEST TON HOUR COST

cost-savings

TOOL FOR TOMORROW

with EASY-FLO and SIL-FOS

Go the "TOOL FOR TOMORROW" theme of this year's ASTE Tool Show one better. Tool for tomorrow with tools that will do your job at lowest cost!

EASY-FLO and SIL-FOS are such tools. These low-temperature silver brazing alloys provide, not only the widest *versatility* in joining metals, but also the basis for surprisingly *simple, fast, economical production.*

A FINE EXAMPLE FROM BLACK & DECKER

Fans for B&D portable drills are made by brazing steel hubs into stamped steel blades on the city gas-air setup shown. Parts are degreased and assembled, with a ring of EASY-FLO 35 dipped in Handy Flux and preplaced between hub and blade. Mechanism moves assemblies along under burners. An assembly is completed every 6 seconds! One operator does it all!



GET FULL FACTS IN BULLETIN 20

It explains the many vital advantages of EASY-FLO and SIL-FOS brazed construction — and why these alloys assure fast, low-cost production of high-strength, virtually indestructible joints. Write for a copy today.



AT THE ASTE TOOL SHOW
CHICAGO • MARCH 19-23
SEE a production brazing job in action... EXAMINE the many examples of EASY-FLO and SIL-FOS brazed parts... TALK OVER your metal joining problems with our experienced engineers. **BOOTH 275**

HANDY & HARMAN — FOUNDED 1867 — QUALITY • SERVICE — ORIGINATORS OF EASY-FLO & SIL-FOS

HANDY & HARMAN

General Offices: 82 Fulton St., New York 38, N. Y.

DISTRIBUTORS IN PRINCIPAL CITIES

OFFICES and PLANTS
BRIDGEPORT, CONN.
PROVIDENCE, R. I.
CHICAGO, ILL.
CLEVELAND, OHIO
DETROIT, MICH.
LOS ANGELES, CALIF.
TORONTO, CANADA
MONTREAL, CANADA

DIRECTORY OF MANUFACTURERS

(*Continued from page* 420)

AUSTRALIA

de HAVILLAND, see de Havilland Aircraft Co., Ltd., listing under Great Britain.

BELGIUM

AVIONS FAIREY S.A., Gosselies, Belgium.

Societe Anonyme Belge De Constructions Aeronautiques, Haren-Bruxelles, Belgium.

GREAT BRITAIN

AUSTER Aircraft, Ltd., Rearsby, Leicester, Eng.

AVRO, see A. V. Roe & Co., Ltd.

A. V. ROE & Co., Ltd., Middleton, Manchester, Eng.

BLACKBURN & General Aircraft Ltd., Brough, East Yorks, Eng.

BRISTOL Aeroplane Co., Ltd., Filton House, Bristol, Eng.

de HAVILLAND Aircraft Co., Ltd., Hatfield, Hertfordshire, Eng.

ENGLISH ELECTRIC Co., Ltd., Wharton Aerodrome, nr. Preston, Lancashire, Eng.

FAIREY Aviation Co., Ltd., Hayes, Middlesex, England.

FOLLAND Aircraft, Ltd., Hampshire, Eng.

GLOSTER Aircraft Co., Ltd., Gloucestershire, Eng.

HANDLEY PAGE Ltd., Cricklewood, London, N.W.2, Eng.

HAWKER Aircraft Ltd., Kingston-Upon-Thames, Surrey, Eng.

HUNTING PERCIVAL Aircraft Ltd., Luton Airport, Bedfordshire, Eng.

SAUNDERS-ROE, Ltd., Osborne, East Cowes, Isle of Wight, Eng.

SCOTTISH AVIATION, Ltd., Prestwick Airport, Ayrshire, Scotland.

SHORT Brothers & Harland Ltd., Queens Island, Belfast, Ireland.

VICKERS - ARMSTRONG, Ltd., Weybridge, Surrey, Eng.

WESTLAND Aircraft Ltd., Yeovil, Eng.

CANADA

de HAVILLAND, see de Havilland Aircraft Co., Ltd., listing under Great Britain.

DENMARK

SKANDINAVISK AERO Industri A.S., Copenhagen Airport, Kastrup, Denmark.

FINLAND

VALMET OY Aircraft Factory, Tampere, Finland.

FRANCE

Avions Paul AUBERT, Paris 17e, France.

S. A. des Ateliers a'Aviation, Louis BREQUET, Paris 16, France.

Avions Marcel DASSAULT, Saint-Cloud, France.

Etablissement FOUGA & Cie, Paris 16e, France.

Avions Max HOLSTE, Paris 8, France.

Societe de Construction Avions HUREL-DUBOIS, Meudon, France.

S. A. des Avions JODEL, Beaune (Cote-D'Or), France.

Rene LEDUC, Argenteuil (Seine-et-Oise), France.

MORANE-SAULNIER, Seine, France.

Societe des Avions & Moteurs Henry POTEZ, Paris 16, France.

Societe Industrielle Pour L'Aeronautique (S.I.P.A.), Seine, France.

Societe Nationale de Constructions Aeronautiques Du Nord (S.N.C.A.N.), Paris 7, France.

Societe Nationale de Constructions Aeronautiques du Sud-Est (S.N.C.A.S.E.), Paris 8, France.

Societe Nationale de Constructions Aeronautiques du Sud-Ouest (S.N.C.A.S.O.), Paris 16, France.

(*Turn to page* 424, *please*)

VERSATILE

MILL-M-MATIC for Accurate, Heavy Duty Production Milling . . . .

. . . for EFFICIENCY

All machine functions within easy reach. All-electric, automatic controls built to conform with J. I. C. standards.

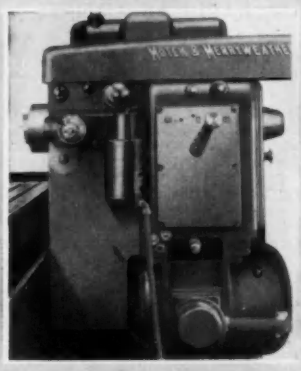
. . . for POWER

25 Hp. Anti-Friction Spindle Drive

Heavy duty milling head driven by large bull gear through involute spline. Extra wide bearing surface in housing when quill is fully extended.



. . . for QUICK, QUIET OPERATION



Hardened, ground gearing. Helical change gears for quick speed selections. Automatic spindle stop. 2-way automatic table cycles.

All the features of Mill-M-Matic point up to high, accurate production.

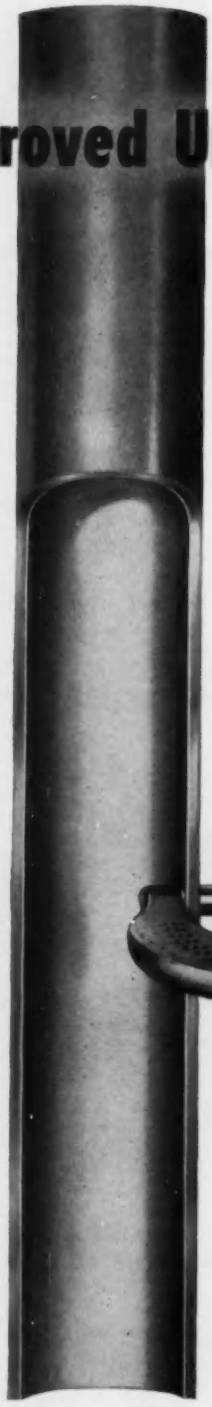
A fresh approach employing control by electric-mechanical powered action opens new possibilities in long life and precision operation in the field of *production milling*. Our 10-page bulletin describes all the advantages found in Mill-M-Matic.

The MOTCH & MERRYWEATHER Machinery Co.

MACHINERY MANUFACTURING DIVISION

CLEVELAND 13, OHIO

Proved Under PUNISHMENT



STANDARD CYLINDER TUBING

"Mirror Finished" to precision tolerances, it's used in automobile shock absorbers, power steering, hydraulic pumps . . . without further sizing or finishing.

Here's a busy part of an automobile shock absorber that's built for brutal punishment. It's Standard's modern "mirror-finish" Cylinder Tube. So that it won't weaken or leak under punishment, every inch of this tubular "toughie" must measure up to exacting specifications—in cylinder finish . . . in I.D. tolerances as close as .001" . . . in extreme uniformity of wall thickness and concentricity . . . in internal pressure resistance, to shocks up to 9000 P.S.I. The elimination of broaching or further processing of any kind effect significant savings for our customers in product assembly.



As you see here, the engineering involved behind the application of tubing to your product is *more than skin deep at Standard.* Our engineers will gladly show you why in helping you with your tubular application—whether it involves a simple structural or mechanical member . . . or a precision application.



Send for 8-page folder on all Standard products or see Sweet's Design Catalog.



MAKE "STANDARD" YOUR SOURCE FOR—

- WELDED MECHANICAL TUBING
- WELDED STAINLESS TUBING
- BOILER AND HEAT EXCHANGER TUBING
- EXCLUSIVE "RIGIDIZED" PATTERNS

STEEL TUBING SIZES: ½" O.D. TO 5½" O.D. — .028 TO .260 WALL.
STAINLESS SIZES: ¼" O.D. TO 4½" O.D. — .020 TO .154 WALL.

DIRECTORY OF MANUFACTURERS

(*Continued from page 422*)

ITALY

AERonautica MACCHI S.P.A., Varese, Italy.
Societa Aeronautica Italiana Ing. A. AMBROSINI & Co., Milano, Italy.
FIAT Societa per Azioni, Torino, Italy.
PIAGGIO & C. Soc. p. Azioni, Genova, Italy.

SPAIN

Aeronautica Industrial, S.A. (A.I.S.A.), Madrid 2, Spain.

SWEDEN

Svenska Aeroplan AB (SAAB), Linkoping, Sweden.

U. S. ROTARY WING AIRCRAFT

For details of their products see page 247.

BELL Aircraft Corp., Fort Worth 1, Tex
CESSNA Aircraft Co., Wichita, Kan.
DOMAN Helicopters, Inc., Danbury, Conn
GYRODYNE Co. of America, Inc., St James, L. I., N. Y.
HILLER Helicopters, Palo Alto, Calif.
KAMAN Aircraft Corp., Bloomfield, Conn.
KELLETT Aircraft Corp., Camden 1, N. J.
McDONNELL Aircraft Corp., St. Louis 3, Mo.
PIASECKI Helicopter Corp., Morton, Pa.
ROTOR-CRAFT Corp., Glendale 1, Cal.
SIKORSKY Aircraft Div., United Aircraft Corp., Bridgeport 1, Conn.

U. S. AIRCRAFT ENGINES

RECIPROCATING TYPE

For details of their products see pages 248-249.

Aircooled Motors, Inc., Syracuse 8, N. Y.
CONTINENTAL Motors Corp., Aircraft Engine Div., Muskegon, Mich.
FRANKLIN, see Aircooled Motors, Inc.
JACOBS Aircraft Engine Co., Pottstown, Pa.
LYCOMING Div., Avco Manufacturing Corp., Williamsport, Pa.
PRATT & WHITNEY Aircraft, Div. United Aircraft Corp., East Hartford 8, Conn.
Curtiss-WRIGHT Corp., Wood-Ridge, N. J.

AIRCRAFT GAS TURBINES

For details of their products see pages 250-253.

UNITED STATES

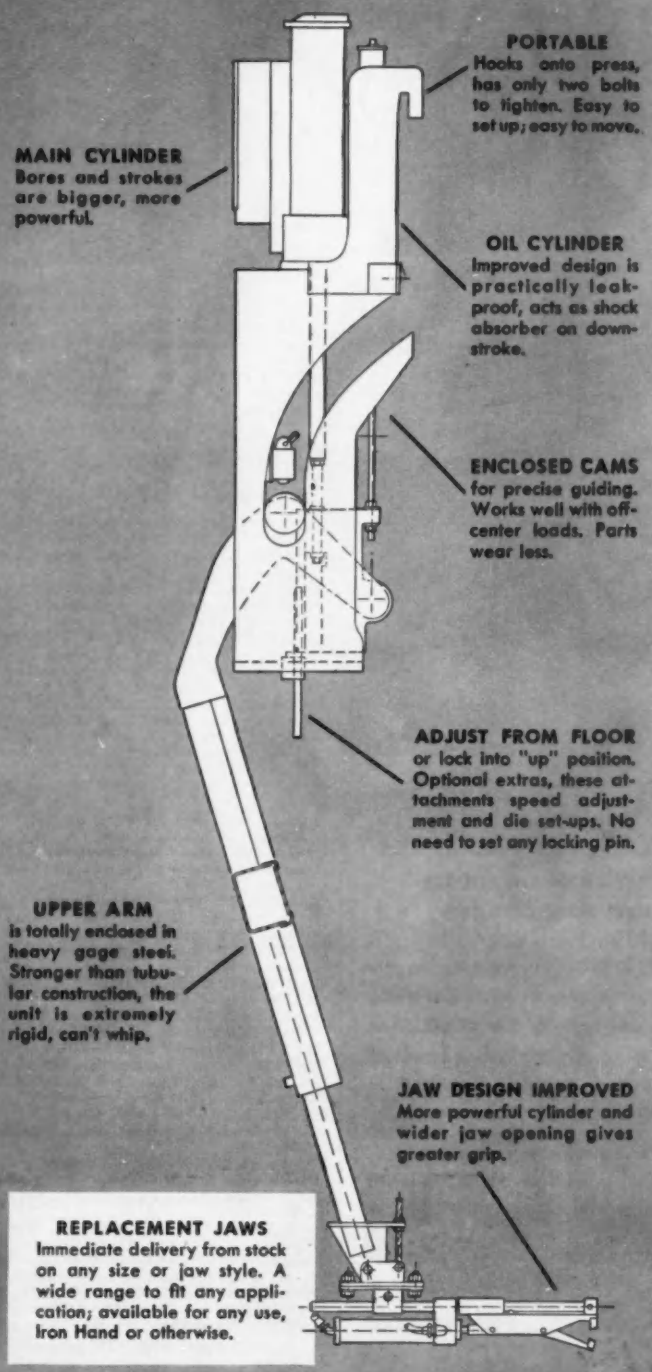
ALLISON Div., General Motors Corp., Indianapolis 6, Ind.
BOEING Airplane Co., Seattle 14, Wash.
CONTINENTAL Aviation & Engineering Corp., Detroit 15, Mich.
FAIRCHILD Engine Div., Fairchild Engine & Airplane Corp., Deer Park, L. I., N. Y.
GENERAL ELECTRIC Co., Aircraft Gas Turbine Div., Cincinnati 15, Ohio.
PRATT & WHITNEY Aircraft, Div. of United Aircraft Corp., East Hartford 8, Conn.
WRIGHT Aeronautical Div., Curtiss-Wright Corp., Wood-Ridge, N. J.

GREAT BRITAIN

ARMSTRONG SIDDELEY Motors Ltd., Coventry, Eng.
BLACKBURN & General Aircraft, Ltd., London, W.1, Eng.
BRISTOL Aeroplane Co., Ltd., Filton House, Bristol, Eng.
de HAVILAND Engine Co., Ltd., Leavesden, Herts., Eng.

(*Turn to page 426, please*)

New 1956 Model Iron Hand is more rugged than ever



Redesigned for heavy-duty work, it takes today's tough jobs with ease

The new 1956 Model Iron Hand has been designed from the ground up for bruising daily double-shift operation: jaws are wider-opening and much stronger, cams more precise, and the frame more rigid. The new design makes it easier to install, easier to adjust, and a cinch to move from press to press.

And performance reports from the field prove that maintenance time—always negligible—has been slashed to the bone by the new design.

Whether you now operate a battery of Iron Hands, or are first considering them, you ought to study the design improvements in the new 1956 Models. For complete information, write

SAHLIN
ENGINEERING COMPANY, INC.
P. O. Box 289, Birmingham, Michigan

OVERHEAD ARMS • FLOOR TYPE UNLOADERS
TURNOVER, TRANSFER AND LOADING MACHINERY

IRON HAND

DIRECTORY OF MANUFACTURERS

(*Continued from page 424*)

D. NAPIER & Son, Ltd., Acton, London W.3, Eng.
ROLLS-ROYCE, Ltd., Aero Engine Div., Derby, Eng.

AUTOMOTIVE GASOLINE ENGINES

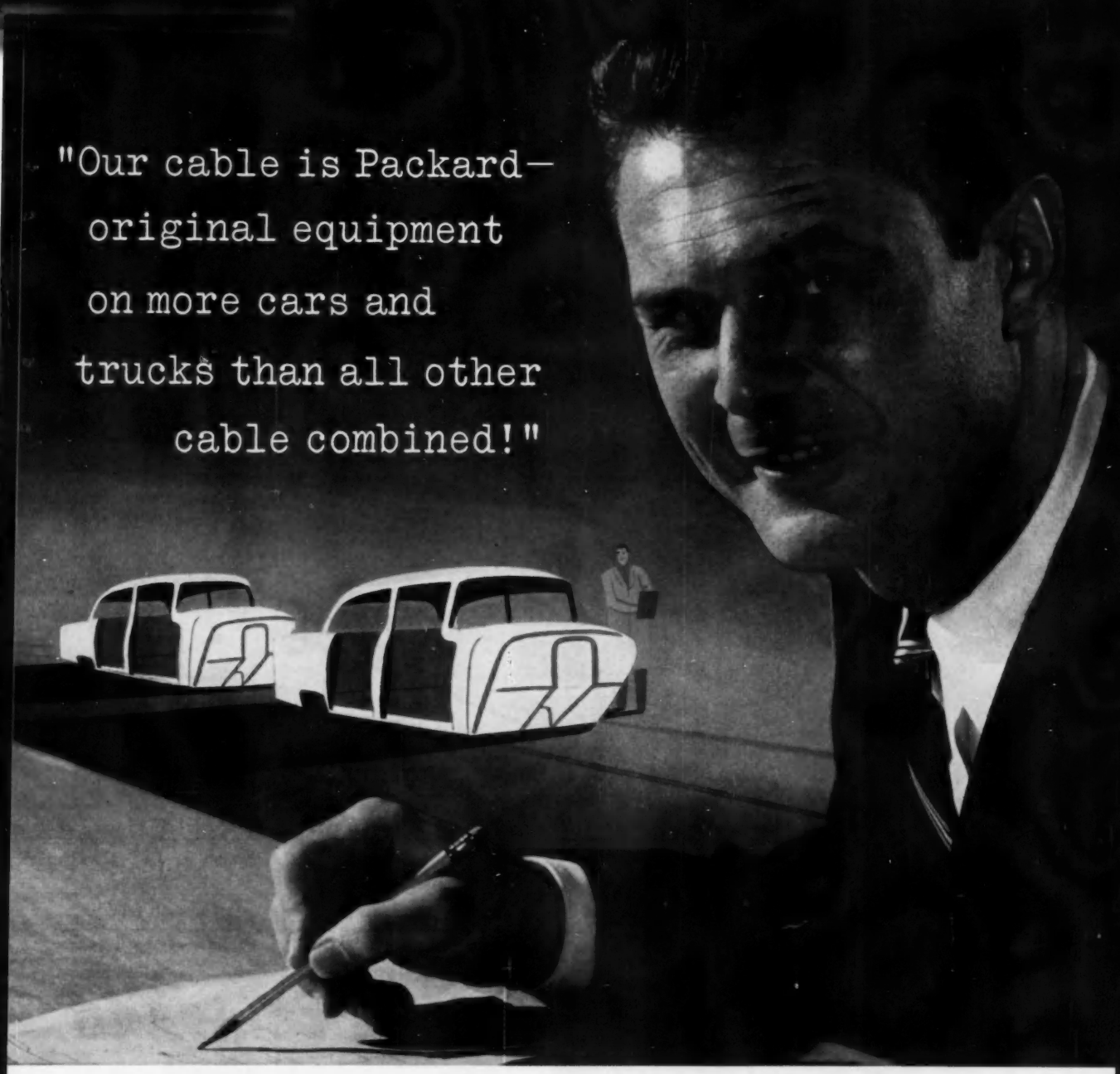
For details of their products see pages 263-273.
ALLIS-CHALMERS Mfg. Co., Buda Div., Harvey, Ill.
ARNOLT Corp., Warsaw, Ind.
BRENNAN Motor Mfg. Co., Syracuse 2, N. Y.
CHEVROLET Motor Div., General Motors Corp., Detroit 2, Mich.
CHRIS-CRAFT Corp., Algonac, Mich.
CHRYSLER Corp., Marine & Industrial Engine Div., Trenton, Mich.
CLIMAX Engine & Pump Mfg. Co., Clinton, Iowa.
CONTINENTAL Motors Corp., Muskegon, Mich.
DEARBORN Marine Engines, Inc., Royal Oak 4, Mich.
DODGE Division, Chrysler Corp., Detroit 31, Mich.
FAGEOL Products Co., Subsidiary of Twin Coach Co., Kent, Ohio.
FORD Motor Co., Dearborn, Mich.
FORD Motor Co., Tractor and Implement Div., Birmingham, Mich.
GMC Truck & Coach Div., General Motors Corp., Pontiac 11, Mich.
GRAY MARINE Motor Co., Detroit 7, Mich.
HALL-SCOTT Motors Co., Engine and Gear Div., Berkeley 10, Calif.
HERCULES Motors Corp., Canton 2, Ohio.
INTERNATIONAL Harvester Co., Industrial Power Div., Melrose Park, Ill.
KERMATH Mfg. Co., Subsidiary of Barium Steel Corp., Detroit 8, Mich.
LATHROP Engine Co., Mystic, Conn.
LE ROI Div., Westinghouse Air Brake Co., Milwaukee 14, Wis.
MACK Mfg. Corp., New York 1, N. Y.
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
NORDBERG Mfg. Co., Milwaukee 7, Wis.
OLIVER Corp., Chicago, Ill.
OLIVER Corp., Plant #2, South Bend 21, Ind.
PALMER Engine Co., Cos Cob, Conn.
RED WING Motor & Mfg. Co., Red Wing, Minn.
REO Motors, Inc., Subsidiary of Bohn Aluminum & Brass Corp., Lansing 20, Mich.
SCRIPP'S Motor Co., Detroit 8, Mich.
STERLING Engine Co., Div. of Sterling Precision Instrument Corp., Menominee, Mich.
STUDEBAKER Div., Studebaker-Packard Corp., South Bend 27, Ind.
UNIVERSAL Motor Co., Oshkosh, Wis.
WAUKESHA Motor Co., Waukesha, Wis.
WILLYS Motors, Inc., Toledo 1, Ohio.
WISCONSIN Motor Corp., Milwaukee 46, Wis.
WITTE Engine Works, Oil Well Supply Div., United States Steel Corp., Kansas City 26, Mo.

AUTOMOTIVE DIESEL ENGINES

For details of their products see pages 274-281.
ALLIS-CHALMERS, Buda Div., Harvey, Ill.
ATLAS, see White Diesel Engine Div., White Motor Co.
CATERPILLAR Tractor Co., Peoria, Ill.
CONTINENTAL Motors Corp., Muskegon 82, Mich.
CUMMINS Engine Co., Inc., Columbus, Ind.
Detroit Diesel Engine Div., General Motors Corp., Detroit 28, Mich.
DEUTZ, see Diesel Energy Corp.
Diesel Energy Corp., New York 5, N. Y.
FAGEOL-LEYLAND, see Twin Coach Co.
FAIRBANKS, MORSE & Co., Chicago 5, Ill.
GENERAL MOTORS, see Detroit Diesel Eng. Div.
GRAY MARINE Motor Co., Detroit 7, Mich.
HALLETT Mfg. Co., Inglewood, Calif.
Harnischfeger Corp., Diesel Div., Crystal Lake, Ill.
HERCULES Motors Corp., Canton 2, Ohio.
HILL Diesel Engine Div., Berry-Hill Corp., Providence 5, R. I.
INTERNATIONAL Harvester Co., Chicago 1, Ill.
KERMATH Mfg. Co., Detroit 8, Mich.
MACK Mfg. Corp., New York 1, N. Y.
MINNEAPOLIS-MOLINE Co., Minneapolis 1, Minn.
MURPHY Diesel Co., Milwaukee 14, Wis.
OLIVER Corp., Charles City, Iowa.
OLIVER Corp., Plant No. 2, South Bend 21, Ind.
OLIVER Corp., Chicago, Ill.
D. W. ONAN and Sons, Inc., Minneapolis 14, Minn.
P&H, see Harnischfeger Corp. Diesel Div.
PACKARD, see Studebaker-Packard Corp.
RED WING Motor & Mfg. Co., Red Wing, Minn.
SCRIPPS Motor Co., Detroit 8, Mich.
Studebaker-Packard Corp., South Bend, Ind.
R. H. SHEPPARD Co., Inc., Hanover, Pa.
STERLING Engine Co., Buffalo 13, N. Y.
SUPERIOR, see White Diesel Engine Div., White Motor Co.

(*Turn to page 430, please*)





Backed by Vast Production Facilities, Packard Electric Can Supply All Your Cable Needs

Whether it is a simple cable component or a complex wiring harness ready for snap-in installation . . . you'll find that Packard Electric is ready to supply all your automotive cable needs. You can be sure of uniform quality, high-volume delivery, on time, and a price that is right.

These are the reasons why Packard Cable is original equipment on more cars and trucks than all other cable combined:

RESEARCH . . . a continuing program at Packard, where you will find the world's most complete automotive cable research facilities available to solve your cable problems.

PRODUCTION . . . a capacity of more than 7,000,000 feet a day for all kinds of cable gives Packard the top volume in the automotive cable field.

RIGID TESTING . . . to insure uniform high quality and a premium product at no extra cost.

Your cable needs are no problem when you deal with Packard, the industry leader in automotive wiring.

GM GENERAL MOTORS

Packard

REG. U.S. PAT. OFF.

Packard Electric Division
General Motors, Warren, Ohio

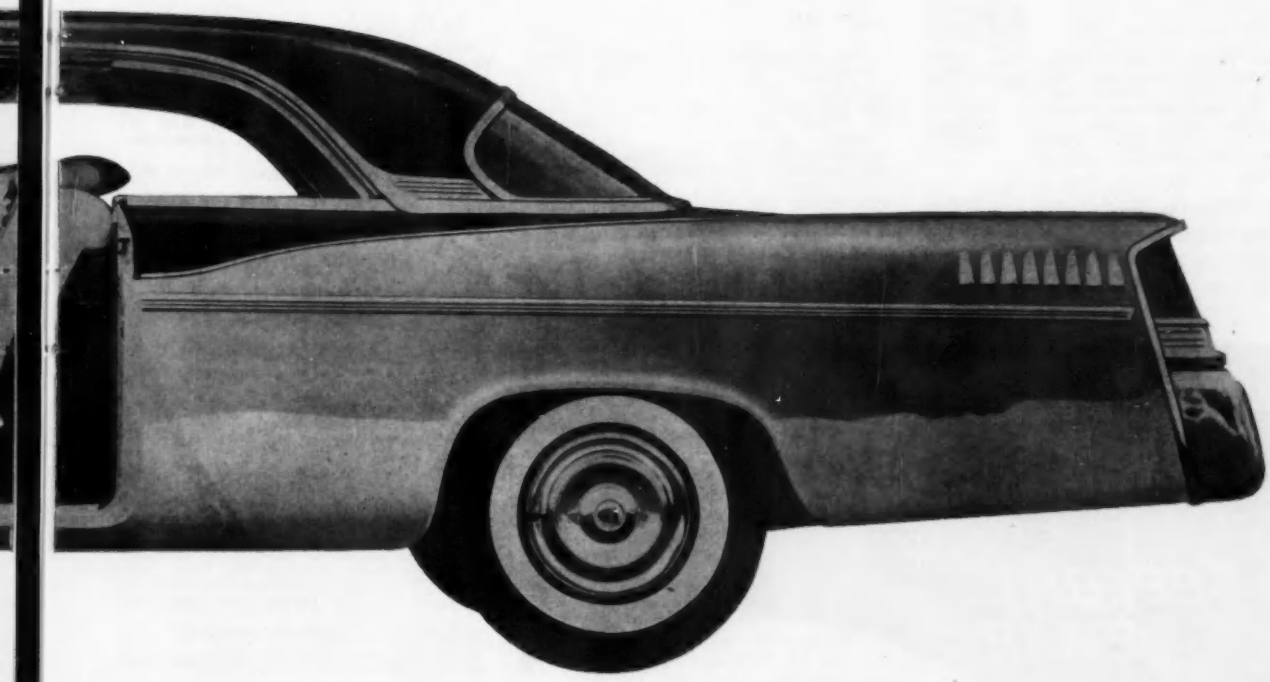
Offices in Detroit, Chicago, and Oakland, California • Aviation, Automotive and Appliance Wiring



ALUMINUM EXTRUSIONS

ADD MORE BEAUTY TO

"THE FORWARD LOOK"



Chrysler Corp. engineers and stylists, always on the alert for new ways to improve design and reduce cost, recently changed seat moulding specifications on the Chrysler New Yorker and Imperial.

The new parts are beautiful, massive-appearing aluminum extrusions. Light Metals Co. of Grand Rapids is the supplier, using materials furnished by Kaiser Aluminum.

Aluminum extrusions were chosen over all other materials because of their beauty and economy.

BEAUTIFUL PARTS MADE POSSIBLE

Chrysler engineers found that the aluminum extrusion process made beautiful parts easy to produce. An extremely wide choice of graceful, decorative forms and shapes were made possible—and virtually any design created could be produced quickly and at lower cost than was possible with any other method.

Beautiful satin finishes were easily achieved by etching and anodizing . . . making aluminum's natural beauty extremely resistant to corrosion and abrasion.

TOOLING COSTS NEGLIGIBLE

Aluminum extrusions *drastically reduced tooling costs!* Simple tooling, limited to the die and standard bending jigs, also made it possible to quickly establish multiple sources of supply.

Versatile aluminum is helping to improve automotive design and reduce cost in many ways. Improvements and substantial savings are being made in screw machine parts and structural and functional components, as well as in trim and molding sections.

We are eager to work with you as an "idea partner." Let our automotive development engineers examine the parts now being used in your production so that we may recommend improvements and savings you can effect by specifying aluminum.

* * *

For immediate service, call TRinity 3-8000, Kaiser Aluminum & Chemical Sales, Inc., 1414 Fisher Bldg., Detroit, Michigan; *General Sales Office,* Palmolive Bldg., Chicago 11, Ill.; *Executive Office,* Kaiser Bldg., Oakland 12, Calif.

Kaiser Aluminum

DIRECTORY OF MANUFACTURERS

(*Continued from page 426*)

Twin Coach Co., Kent, Ohio.
WAUKESHA Motor Co., Waukesha, Wis.
WHITE Diesel Engine Div., White Motor Co., Springfield 99, Ohio.
WITTE Engine Works, Oil Well Supply Div., United States Steel Corp., Kansas City 26, Mo.

U. S. SMALL GASOLINE ENGINES

For details of their products see pages 282-283.

BRIGGS & STRATTON Corp., Milwaukee 1, Wis.
CLINTON Machine Co., Maquoketa, Iowa.
CONTINENTAL Motors Corp., Detroit 14, Mich.
CUSHMAN Motor Works, Lincoln 1, Neb.
GLADDEN Products Corp., Glendale 4, Calif.
GRAVELY Tractors, Inc., Dunbar, W. Va.
HOMELITE Div., Textron American, Inc., Port Chester, N. Y.
JACOBSEN Mfg. Co., Racine, Wis.
KERMATH Mfg. Co., Subsidiary of Barium Steel Corp., Detroit 8, Mich.
KOHLER Co., Kohler, Wis.
LAUSON Co., Div., Hart-Carter Co., New Holstein, Wis.



LAWN BOY, Div., Outboard Marine & Mfg. Co., Lamar, Mo.
McCULLOCH Motors Corp., Los Angeles 45, Calif.
D. W. ONAN & Sons, Inc., Minneapolis 14, Minn.
POWER PRODUCTS Corp., Grafton, Wis.
REO Div., Motor Wheel Corp., Lansing 3, Mich.
UNITED Engine Co., Lansing, Mich.
UNIVERSAL Motor Co., Oshkosh, Wis.
WEST BEND Aluminum Co., Hartford Div., Hartford, Wis.
WISCONSIN Motor Corp., Milwaukee 46, Wis.

U. S. OUTBOARD MOTORS

For details of their products see pages 284-285.

BUCCANEER, see Gale Products Div., Outboard Marine & Mfg. Co.
CHAMPION Motors Co., Minneapolis 13, Minn.
CORSAIR, see Scott-Atwater Mfg. Co.
ELGIN, see West Bend Aluminum Co., Hartford Div.
EVINRUDE Motors Div., Outboard Marine & Mfg. Co., Milwaukee 16, Wis.
FAGEOL Products Co., Subsidiary of Twin Coach Co., Kent, Ohio.
FIRESTONE, see Scott-Atwater Mfg. Co.
FLAMBEAU, see Metal Products Corp.
JOHNSON Motors Div., Outboard Marine & Mfg. Co., Waukegan, Ill.
GALE Products Div., Outboard Marine & Mfg. Co., Galesburg, Ill.
Kiekhaefer Corp., Fond du Lac, Wis.
HIAWATHA, see Scott-Atwater Mfg. Co.
LAUSON Co., Div. Hart-Carter Co., New Holstein, Wis.
MAJESTIC, see Champion Motors Co.
MERCURY, see Kiekhaefer Corp.
METAL PRODUCTS Corp., Milwaukee 12, Wis.
Muncie Gear Works, Inc., Muncie, Ind.
NEPTUNE, see Muncie Gear Works, Inc.
OLIVER Outboard Motors, Div., Oliver Corp., Battle Creek, Mich.
SCOTT-ATWATER Mfg. Co., Inc., Minneapolis 13, Minn.
VOYAGER, see Champion Motors Co.
WEST BEND Aluminum Co., Hartford Div., Hartford, Wis.

DIESEL ENGINES FOR DIESEL-ELECTRIC LOCOMOTIVES

For details of their products see page 285.

ALCO Products, Inc., Schenectady 5, N. Y.
BALDWIN-Lima-Hamilton Corp., Eddystone Div., Philadelphia 42, Pa.
COOPER-BESSEMER Corp., Mt. Vernon, Ohio.
ELECTRO-MOTIVE Div., General Motors Corp., La Grange, Ill.
FAIRBANKS, MORSE & Co., Chicago 5, Ill.

INDUSTRIAL TRUCKS

For details of their products, see pages 334 through 344.

ALLIS-CHALMERS, Harvey, Ill.
AUTOMATIC Transportation Co., Div. Yale & Towne Mfg. Co., Chicago 20, Ill.
BAKER-Raulang Co., Subsidiary of Otis Elevator Co., Cleveland 2, Ohio.
BARRETT-Cravens Co., Northbrook, Ill.
CHAMP Corp., El Monte, Calif.
CLARK Equipment Co., Battle Creek, Mich.
COLSON Corp., Elyria, Ohio.
CRESCENT, see Barrett-Cravens Co.
ELWELL-PARKER Electric Co., Cleveland 3, Ohio.
ERICKSON Power Lift Trucks, Inc., Minneapolis, Minn.
GERLINGER Carrier Co., Dallas, Ore.
Frank G. Hough Co., Libertyville, Ill.
HYSTER Co., Portland 8, Ore.
KALAMAZOO Mfg. Co., Kalamazoo, Mich.
Knickerbocker Co., Jackson, Mich.
KWIK-MIX Co., Port Washington, Wis.
Lamson Mobilift Corp., Syracuse 1, N. Y.
LEWIS-SHEPARD, Watertown, Mass.
LIFT TRUCKS, Inc., Cincinnati 14, Ohio.
MAC DONALD, see Peterbilt Motors Co.

(*Continued on next page*)

(*Continued from previous page*)
MARKET FORGE Co., Everett 49, Mass.
MERCURY Mfg. Co., Chicago 9, Ill.
MOBILIFT, see Lamson Mobilift Corp.
PAYLOADER, see Frank G. Hough Co.
Peterbilt Motors Co., Oakland 5, Cal.
RAYMOND Corp., Greene, N. Y.
REVOLVATOR Co., No. Bergen, N. J.
SILENT HOIST & Crane Co., Brooklyn 20, N. Y.
TOWMOTOR Corp., Cleveland 10, Ohio.
TRANSITIER Truck Co., Portland 1, Oregon.
TRUCK-MAN, see Knickerbocker Co.
YALE & TOWNE Mfg. Co., Philadelphia 15, Pa.

Design of American Motors V-8

(*Continued from page* 285)

and the intake port facings are held parallel to the cross-sectional center-line of the banks to further reduce the height of the carburetor flange.

The above items allowed us to design an engine that has a width of 22⅝ in. across the exhaust manifolds, and a height from the crankshaft center-line to the carburetor flange of 14 5/16 in. The overall length from the back face of the engine to the center of the fan pulley is 27 23/32 in. It must also be born in mind that these dimensions will remain unchanged for an engine of much greater displacement than the present 250 cu in.

Although servicing an installed engine is one of the inherent problems of V-8 design, a number of features were adopted to ease this problem. Spark plugs are located well above the exhaust manifolds, and are in a nearly vertical position for easier removal and installation. Service consideration was also given to the generator as it is located at the upper right hand side of the engine and away from the tappet covers for easier accessibility. In addition, the distributor has a tang length for mating with the oil pump shaft, that allows this engagement to be made prior to engagement of the distributor gear with the camshaft drive gear.

MANUFACTURING

Extremely close liaison was maintained with our manufacturing personnel during the design and development stages of the engine. As a result many economics in fabricating and tooling processes were built into the original design, and have since been carried through into production.

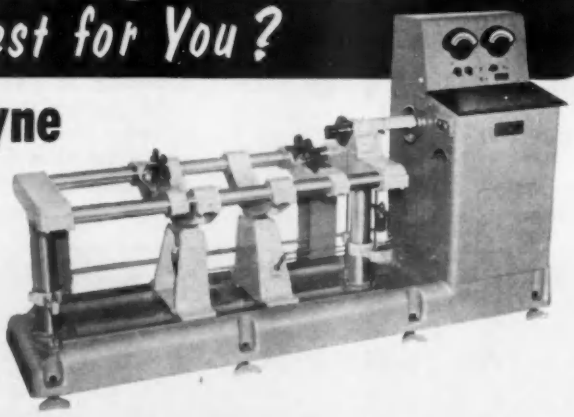
Tooling facilities for the V-8 are completely new, and are based on what we call "Segmented Automation." In this type of manufacturing, each basic section of tooling, although completely automatic, is not fully integrated with other sections. For our purposes, this type of tooling means increased flexibility as each portion of the line can be utilized independently of other operations.

Of particular interest is the cylinder block boring equipment, which has been designed to simultaneously finish blocks of two different bore dimensions. It con-



Which of These OLSEN Balancing Machines Is Best for You?

ElecΦdyne



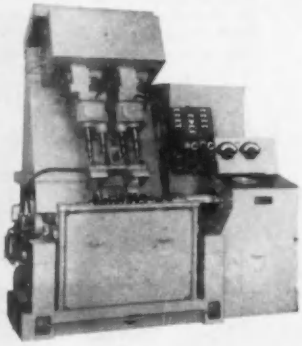
Horizontal Static-Dynamic Balancing Machines.

21 models for parts from 3 oz. to 5,000 lbs. or more.



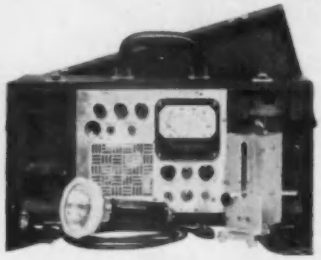
ElecΦdyne

Vertical Static Balancing Machines. Optional drill unit for rapid correction.



Automatic

Balancing Machines. 30 or more crankshafts per hour corrected to within 0.25 oz.-in.



VibrΦdyne

. . . a new concept in Vibration Analysis and Correction. Fast, accurate "in-place" balancing.

No matter what your requirements, there's a Tinius Olsen Balancing Machine that will cut your balancing time and costs to an astonishing minimum. It will pay you to get the facts about the complete line of Olsen ElecΦdyne Balancing Machines for high speed, low cost production line balancing. Write for Bulletin 49 today.

For further information about the new Vibrodyne Vibration Analyzer and Balancer, send for Bulletin 53.

TINIUS OLSEN TESTING MACHINE CO.

2090 Easten Road · Willow Grove, Pa.

Testing & Balancing Machines

tains two sets of roughing, finishing, and chamfering tools, and blocks of either bore size can enter the equipment in any mixed sequence. Each station is set to tool one size bore, and when a block enters that station, a probe automatically determines whether or not to cycle the cutting heads.

WEIGHT

The many features incorporated to keep engine height and length to an absolute minimum, have aided tremendously in reducing engine weight. In addition, every possible design detail has been very carefully investigated for possible further weight reduction. Loading and stressing of all parts was painstakingly calculated to make sure that we were not guilty of over-designing.

Regarding the loading and stressing of parts, all components where applicable, were considered for use with the larger displacement versions of this engine. Consequently, even though the weight of present production engine compares very favorably with competitive powerplants, the advantages of our weight-saving program will be much more apparent in future versions of this engine.

CYLINDER BLOCK

As any engine is basically built in and around the cylinder block, this component is the biggest factor in regard to powerplant size, weight, and flexibility. Even engine harshness and durability of the drive train parts depend on the rigidity and design of the block. In the American Motors design, every effort has been made to provide a satisfactory base upon which to build the engine.

The crankcase flange has been carried 2¾ in. below the crankshaft center line in order to provide inherent stiffness and a good oil pan sealing flange. The flywheel housing mounting surface provides a wide and deep base for drive train mounting, and the 30 cylinder head bolts give a pattern that carries the gas pressure load evenly into the water jacket walls rather than into the cylinder bores. This arrangement reduces distortion and consequent abnor-

Every sleeve bearing must be precisely engineered for the job to be done. Load, speed, temperature and many other critical requirements must be met. Continuous research, engineering and metallurgy enables us to meet these exacting requirements on a wide variety of mechanical assemblies . . . for which we produce millions of bearings each year.



Bearings for Industry



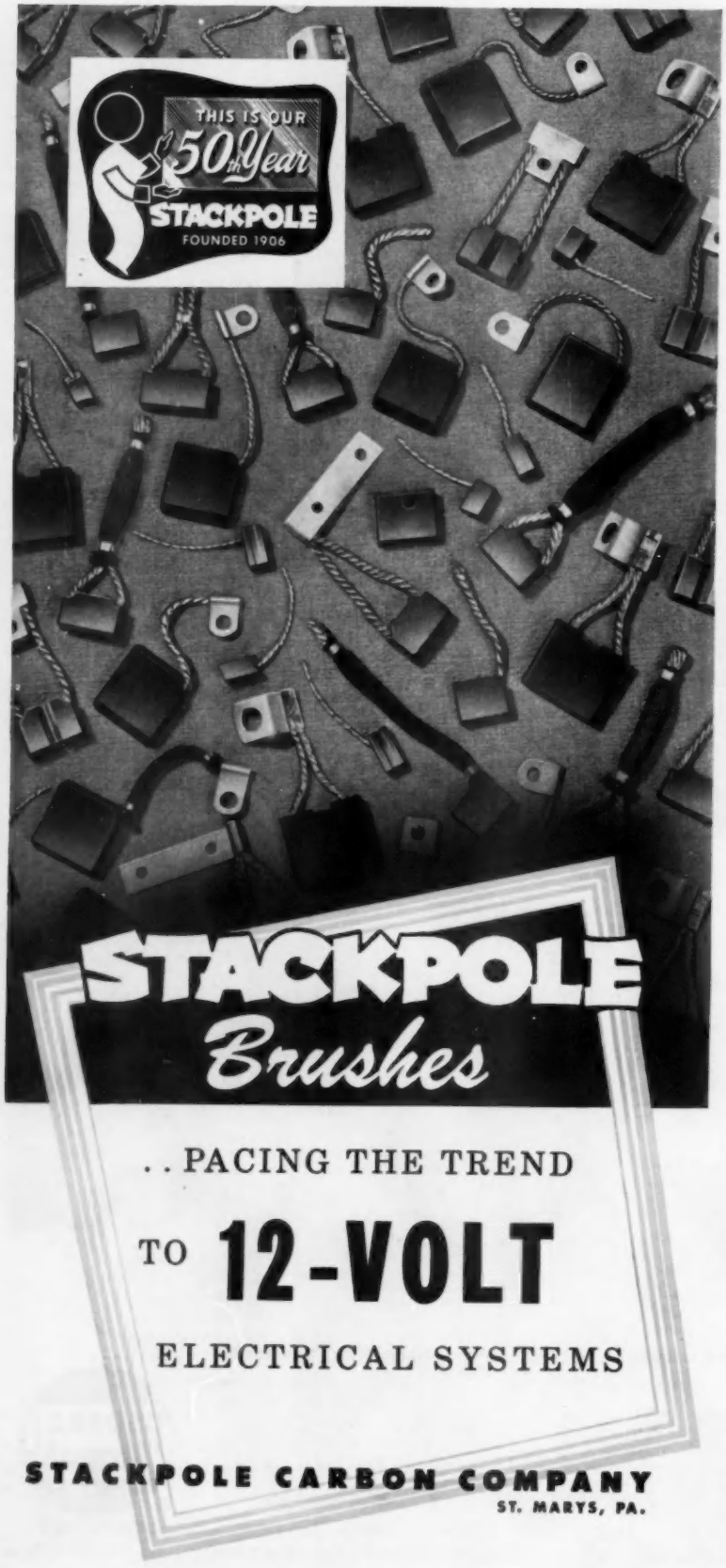
RESEARCH • DESIGN • METALLURGY • PRECISION MANUFACTURING

FEDERAL-MOGUL DIVISION

FEDERAL MOGUL

SINCE 1899

FEDERAL-MOGUL-BOWER BEARINGS, INC., 11037 SHOEMAKER, DETROIT 13, MICHIGAN



mal wear of the bores, pistons, and piston rings.

Due to the fact that the block comprises the greatest weight of any component in the engine, it provides a lucrative field in which to affect weight reduction. We have taken advantage of this fact wherever tests and previous experience have shown it to be possible. Working from the bore to bore distance of 4¾ in. set by future displacement needs, the overall length of the block has been held to 23.02 in. by careful consideration of coolant and loading needs. Windows have been cast in the main bearing webs where strength requirements showed it possible, pockets have been cast on either side of the rear flange for further weight reduction. The right pocket nestles the starter close to the crankcase and allows the starter to be fastened to a light weight die cast aluminum flywheel housing. It is obvious that we cancel several machining operations for a starter pad normally found on the block, and in addition omit a considerable amount of cast iron. It is estimated that a saving of approximately 15 lb of metal has been realized on the rear of the block alone.

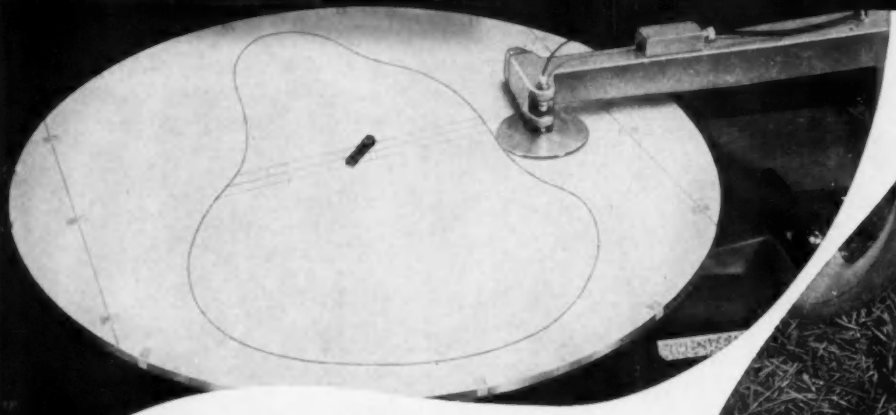
We have realized manufacturing savings by eliminating hard sand cores wherever possible. Green sand has been provided for the front, side, top and tappet chamber sections, and hard sand cores for only the crankcase, bores, water jackets, and rear face. All cores are machine set to minimize breakage.

Machining operations have also been taken into account during the design stage of the engine, which resulted in the complete lack of any machining setup carried out for one drilling or surfacing operation only.

COMBUSTION CHAMBER

A very wide variety of opinions exist throughout the automotive industry on just what constitutes a good, efficient combustion chamber. We have chosen for this engine, a type of chamber that gives what we consider the more impor-

(*Turn to page* 438, *please*)

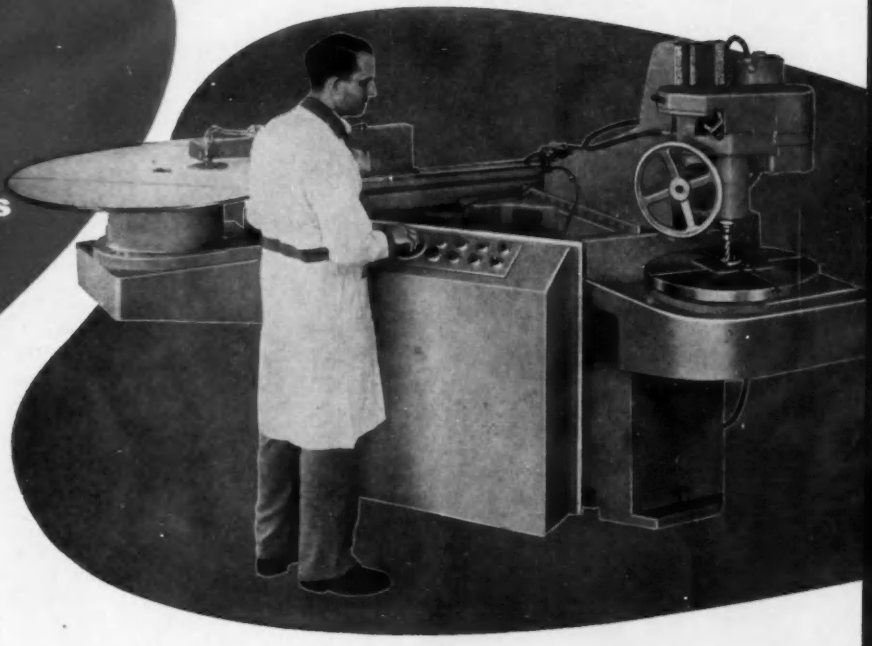


Here, the non-contacting tracer follows the large-scale contour drawing easily prepared with electrically conductive "ink." For this job, a 10:1 drawing-to-workpiece reduction ratio is used, but any desired scale such as 20:1 or higher can be selected.



Following the action of the tracer, the cutter reproduces the exact shape of the drawing on the workpiece. Due to the selected reduction ratio, any errors in the drawing are reduced in the same proportion; resulting in accurate milling or grinding.

mill or grind IRREGULAR CONTOURS *without* expensive models *or* complex special tooling



- **mill or grind directly from simple line drawings**
- **extremely accurate**
- **unique, non-contacting tracer control**

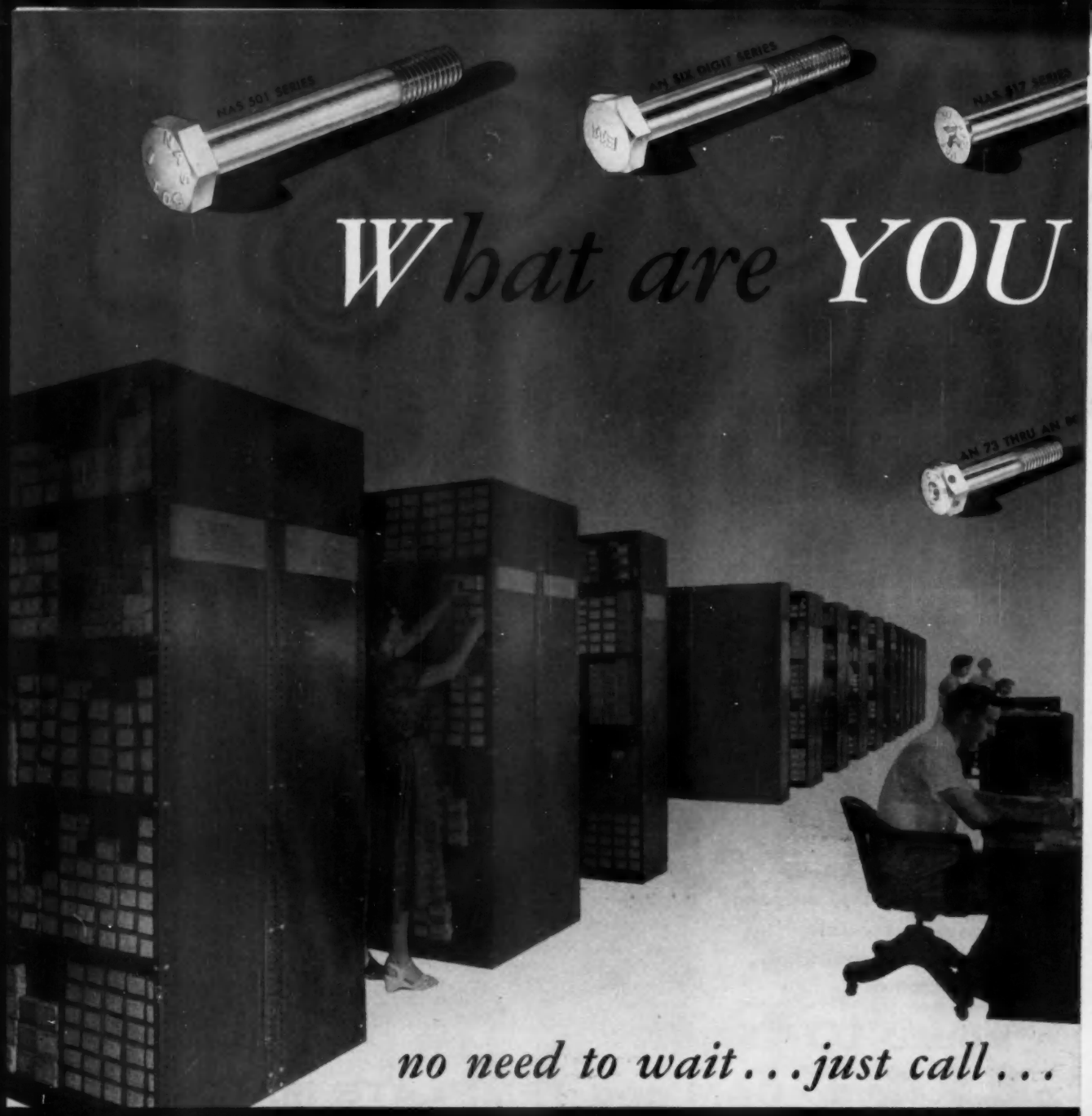
MODEL 104 *Electronic* CAM and TEMPLATE MACHINE

If you are producing external or internal cams, templates, blanking punches or dies of complex, irregular shape, here are important opportunities for greater accuracy, shorter production times and lower costs than ever before possible! Send for your copy of Circular No. 579-1 fully describing the Model 104 Cam and Template Machine. Or, write to West Hartford on your Company letterhead outlining your requirements. Manufactured by the New England Machine & Tool Company. Sales representation by Pratt & Whitney.

SEE THIS MACHINE AT THE A. S. T. E. SHOW.
NEW ENGLAND MACHINE & TOOL CO., BOOTH NO. 461

PRATT & WHITNEY COMPANY
INCORPORATED
18 Charter Oak Boulevard, West Hartford, Connecticut
Direct Factory Representatives in Principal Cities

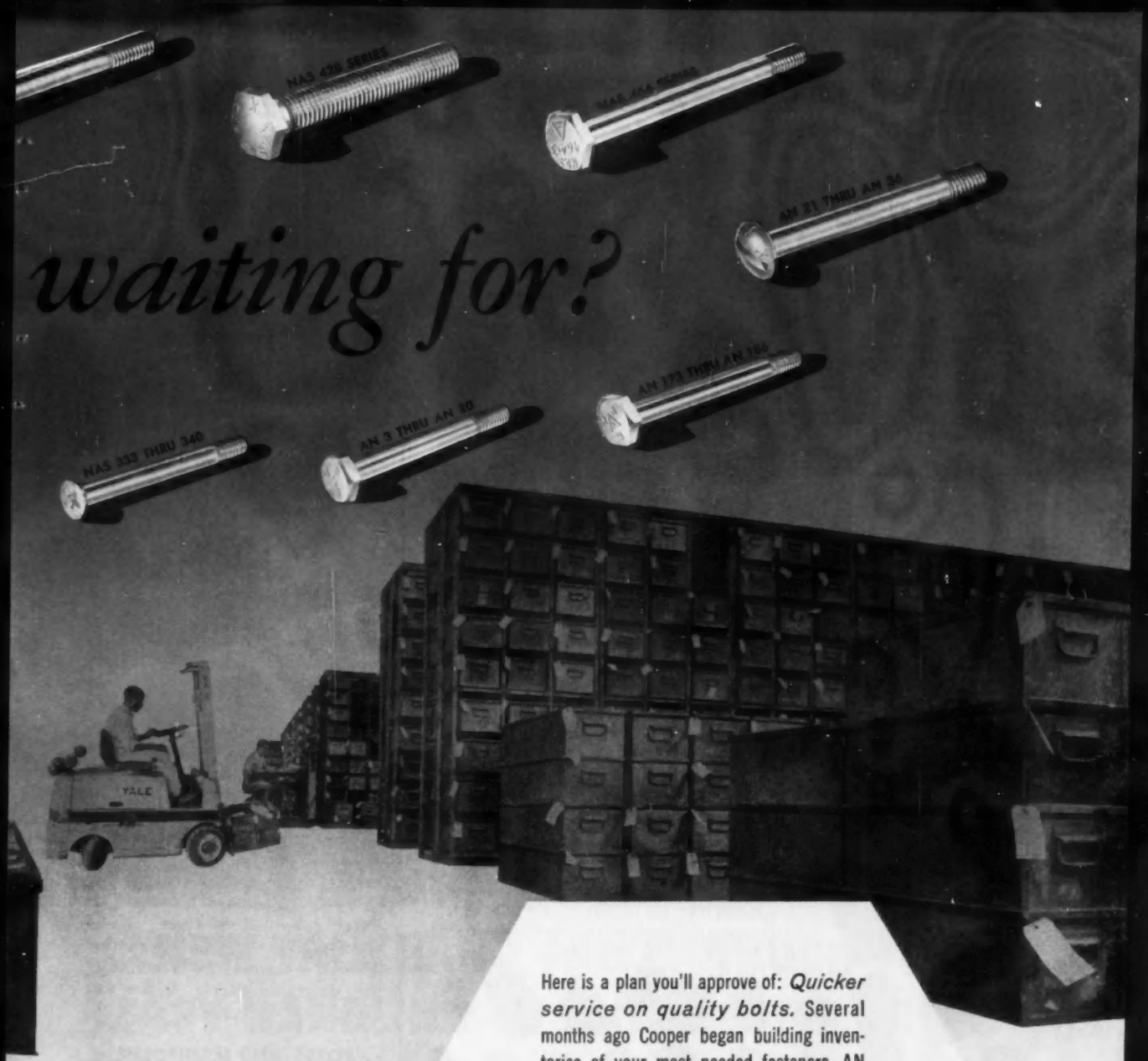
MACHINE TOOLS • GAGES • CUTTING TOOLS



COOPER PRECISION PRODUCTS

Name of Stocking Distributor Near You—On Request

5625 WEST CENTURY BOULEVARD, LOS ANGELES 45,



waiting for?

ORegon 8-3973

Here is a plan you'll approve of: ***Quicker service on quality bolts.*** Several months ago Cooper began building inventories of your most needed fasteners, AN and NAS, in finished and semi-finished stock. Today as part of the aircraft industry and allied precision industries, *you* have an always ready stockpile of highest quality standard bolts—in substantial quantities. Yes, almost surely we've got your number at Cooper. When you want the *best* in a hurry, just try ours.

WORLD'S LARGEST STOCK
HIGHEST QUALITY FASTENERS

CALIFORNIA

Symbol of security in fasteners

C
P X P



American Motors V-8 Design

(*Continued from page* 434)

tant of the various characteristics obtainable.

The design used can best be described as a kidney-shaped, wedge type, cast chamber. Excellent results have been obtained on our recent six cylinder engines with this type of configuration, and it inherently contains a number of the desirable factors we were after. Being cast, it requires a minimum of machining, and consequently, volume can be placed just where we want it. The kidney-shape gives a swirling action to the intake gas for better turbulence, and spark voltage requirements are quite low. There is no shrouding of the valves and therefore a high volumetric efficiency is obtainable. Combustion characteristics are such that the rate of pressure rise is controlled to minimize engine harshness. A compression ratio of 8.0-1 has been chosen to allow this engine to burn regular fuel and therefore, further effect the economy of operation.

Spark plugs are effectively cooled by the considerable volume of water surrounding them. These plugs are located in the chamber in such a manner as to minimize the "drowning effects" of low air-fuel ratios during cold starts.

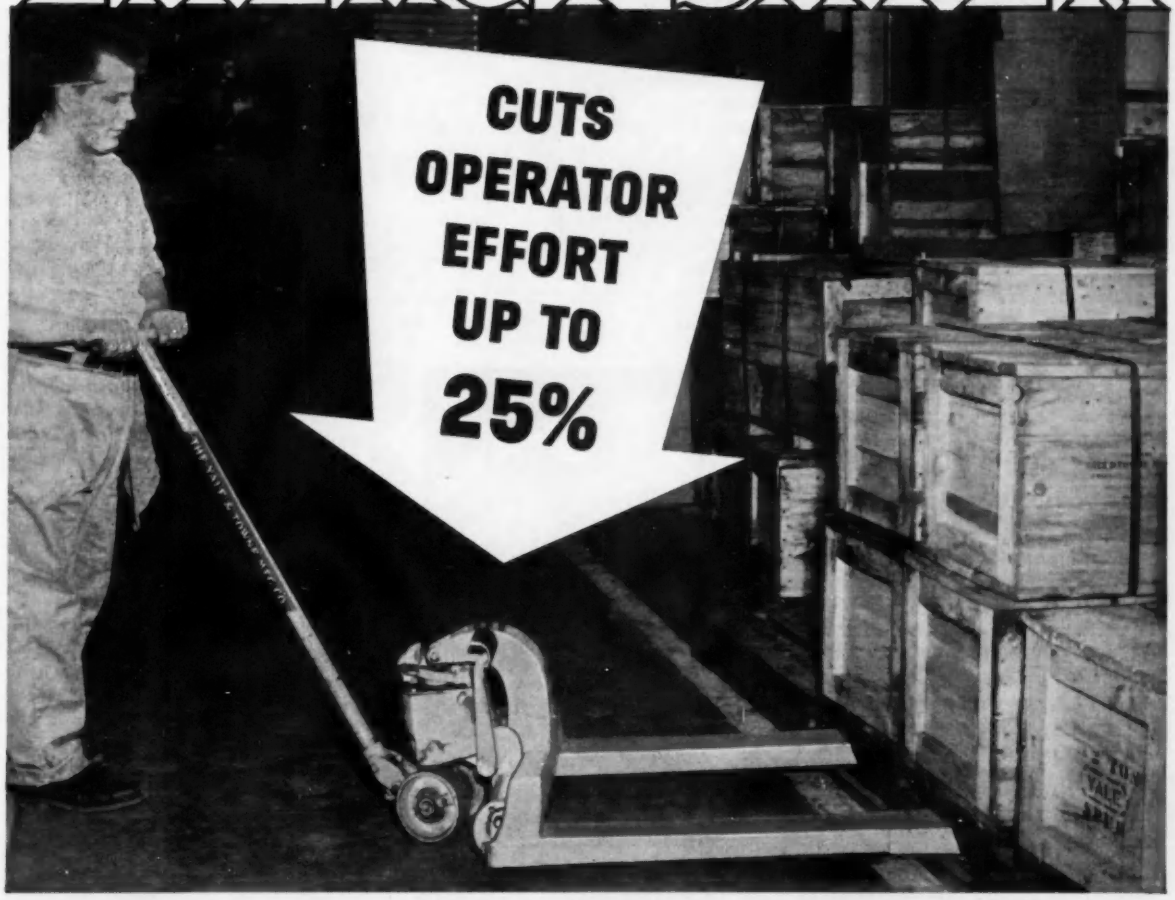
PORTS AND MANIFOLDS

The purpose of induction and exhaust systems is to efficiently feed and scavenge an engine under all driving conditions. The intake manifold must be much more than just an inlet to a high speed air pump, and the exhaust system must be scientifically balanced for the load it carries.

Many major and minor changes were made in the intake manifold for this engine before the production version was agreed upon. Numerous cold and hot starting tests, plus runs under all operating conditions, were made in order to provide a manifold that would

(*Turn to page* 442, *please*)

ENERGY SAVER



NEW YALE HAND PALLET TRUCK FOR EASY HANDLING OF AUTOMOTIVE PARTS

The new Yale Model A Hydraulic Hand Lift Pallet Truck weighs only 200 lbs.—yet easily handles loads up to 2000 lbs. Workers prefer this light-weight construction of the new Yale Truck because there is less deadweight to pull or push...less energy consumed in close quarter maneuvering. Moreover, the compression tubes, used for lifting, are mounted high in the forks...allow 50% more grade clearance than most other hand trucks. Used alone or in an integrated materials handling system, these new Yale Hand Trucks keep the flow of materials smooth ...handle more volume per shift...prevent slow-downs due to excessive operator fatigue. For full facts, write The Yale & Towne Manufacturing Company, Philadelphia 15, Pa., Dept. 73.

SPECIFICATIONS:

- **Capacity: Hydraulic Lift up to 2000 lbs.**
- **Weight with 48" forks: 200 lbs.**
- **Ground clearance: Lowered—1⅜"; Raised—5⅜".**
- **Handle: Balanced Spring Type.**
- **Fork Lengths: 30" to 72" in 6" increments.**
- **Bearings: Front wheels—Tapered Roller Bearings; Rear wheels—Ball Bearings.**

YALE* **INDUSTRIAL LIFT TRUCKS AND HOISTS**

*REG. U.S. PAT. OFF.

Gas, Electric, Diesel & LP-Gas Industrial Trucks • Worksavers • Warehousers • Hand Trucks • Hand and Electric Hoists

News of the MACHINERY INDUSTRIES

By Thomas Mac New

No U. S. Tools for Soviet

After a recent Senate Government Operations subcommittee meeting, looking into East-West trade, there was some misconception that American tools are being sent abroad and then transhipped to the U. S. S. R. or satellites thereof. According to machine tool executives contacted by AUTOMOTIVE INDUSTRIES, the U. S. machine tool industry has not knowingly shipped tools to any foreign country for transhipment to Communist countries. However, the British have been shipping some of their machines to Red countries. In effect then, when an American machine is sent abroad, a similar foreign tool may be released for Red shipment. The Senate subcommittee reported that British shipments of machine tools to Russia have risen from $358,-000 in the first half of 1954 to $10,-563,884 in the final half of 1955.

NMTBA Sales Conference

Joseph T. Vinbury, sales manager of Abrasive Machine Tool Co. and chairman of the National Machine Tool Builders' Association sales conference committee, tells us that the conference will be held at Purdue University, July 30 to August 3.

Around the Industry

Acme Aluminum Alloys, Inc., Dayton, is eliminating its foundry and changing over to tool and special machinery manufacture. The company has spent over $500,000 for its rehabilitation program. A large portion of the total outlay went for machine tools, such as No. 5 Cincinnati vertical mill, a BG-22 Pratt & Whitney Keller machine, and an electronically-controlled Lucas horizontal boring, drilling and milling machine.

Ex-Cell-O Corp., Detroit, has set up a new engineering office in Toledo, Ohio, to coordinate work done in its Lima, Ohio, and Detroit plants. The company plans to staff the facility with approximately 30 engineers.

Overton Gear and Tool Corp., a newly-formed gear making corporation, has completed installation of equipment in its new plant in Addison, Ill. The company will manufacture spur and helical gears, both internal and external, from any ferrous or non-ferrous metal, composition, or plastic; 3 to 16 diametrical pitch crown and straight shaved up to 18 in. pitch diameter, ground tooth up to 18 in. pitch diameter, and hobbed and shaped up to 36 in. diameter.

Allegheny Ludlum Steel Corp. is putting a new 2000-ton forging press in its Dunkirk, N. Y., plant. The press will be used for the hot working of high alloy tool steels. W. R. Breeler, works manager, says that the new facility should be in operation before the end of this year. The press, along with its auxiliary equipment, will be housed in a new stainless steel clad building 300 ft long and 165 ft wide. Auxiliary facilities include heating and annealing furnaces, finishing equipment, testing, and shipping. Lake Erie Engineering Corp., Buffalo, will build the press which will be of the inverted type. It will have automatic control features.

At last — a low-cost

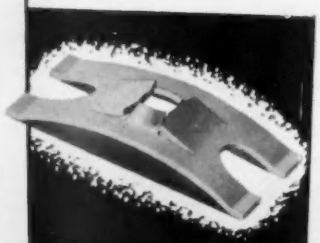
RATTLEPROOF FASTENER

Grips securely on hard chome studs

New heat-treated, spring steel Type "H" PUSHNUT Fasteners exert constant tension when assembled on unthreaded studs or rods of emblems, nameplates, ornaments, etc.

- Four gripping teeth provide maximum gripping action
- Long, high spring arch maintains tension in service
- Large body size permits easy handling, reduces shop loss
- Turned up ends slide over body deadener, radio grilles and plastic surfaces without digging
- Easily assembled. Hand or power tools, magnetic or non-magnetic, available.

Free samples and prices



PUSHNUT Trademark **FASTENERS TYPE "H"** 1/16", 3/32", 1/8"

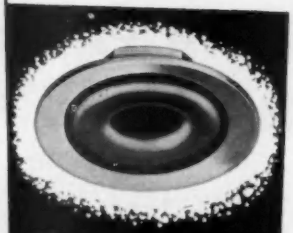
Seal out Water Dirt and Dust

fastening emblems, handles, trim, etc.

PALNUT Washer Lock Nuts with Sealer combine the functions of a nut, lock washer, flat washer and sealer in a one-piece fastener. Big savings in parts and assembly time.

- Maximum thread sealing. Hollow hex design forces sealer into stud clearance hole — seals to depth of several screw threads.
- Bonded sealer. Clean, plastisol compound does not distort or come off during assembly or shipment.
- Easy starting. No binding in threads; permits finger starting.
- Resilient locking action avoids stud damage or body dimpling.

Get samples, data, prices



PALNUT Trademark **WASHER LOCK NUTS WITH SEALER**

THE PALNUT COMPANY, 60 Glen Road, Mountainside, N. J.

Subsidiary of United-Carr Fastener Corporation

Regional Sales Office: 730 West Eight Mile Road, Detroit 20, Mich.

Come to the ASTE Show!

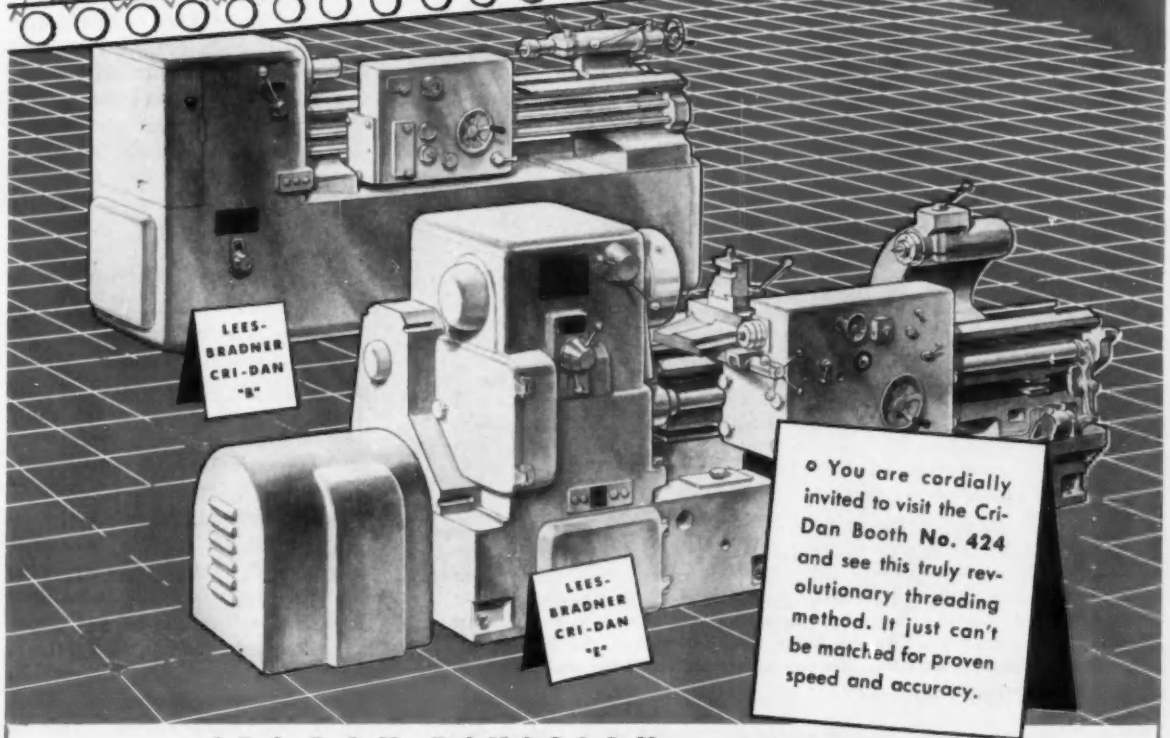
INTERNATIONAL AMPHITHEATER

CHICAGO · MARCH 19 - 23, 1956

STARRING

THE CRI-DAN

"THE ONLY PROVEN SINGLE POINT THREADING MACHINE!"



o You are cordially invited to visit the Cri-Dan Booth No. 424 and see this truly revolutionary threading method. It just can't be matched for proven speed and accuracy.

CRI-DAN DIVISION

the LEES-BRADNER Company

CLEVELAND 11, OHIO, U.S.A.



HERE IS A SINGLE SOURCE

for everything you need in spraying equipment...to apply finishes and coatings better, faster and more economically...to add eye-appeal... to protect against rust...to deaden sounds...to spray oil, plastics and other fluids...for plant maintenance...and to perform countless other labor and money-saving chores.

Each Binks part is specifically designed to give top efficiency with every other Binks product. When you standardize on Binks equipment you have a completely integrated spray painting system. One purchase order covers everything you need...nationwide distribution assures you of immediate service...technical assistance and schooling is yours for the asking...and you always know you are getting the best spray equipment money can buy...the equipment preferred by leading manufacturers everywhere.

142-55

Binks
EVERYTHING FOR SPRAY PAINTING

ASK YOUR DISTRIBUTOR
for a copy of Binks' big 956 Catalog-Data Book which describes the complete line, or write direct to the address below on your company letterhead. No obligation.



Binks Manufacturing Company
3120-30 Carroll Ave., West, Chicago 12, Ill.

REPRESENTATIVES IN PRINCIPAL U. S. AND CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

American Motors V-8 Design

(*Continued from page* 438)

give the average driver a 'satisfactory feeling' engine.

The illustration shows the basic configuration of the intake and exhaust port designs. Starting with the intake port opening in the head, it can be seen that a smooth balanced transition is obtained in relation to the valve opening. The slight restriction of flow and consequent increase in gas velocity tends to develop a 'ram' effect at the valve with subsequent increase in engine torque. Valve size is such that the theoretical gas velocity through the valve is believed to be lower than any automotive engine on the market today.

It can be seen that exhaust ports have also been designed to give balanced areas. Port size is increased as gases move away from the valve to give efficient scavenging and minimize back pressure. Exhaust manifolds are ample in area and provide for a smooth continuous flow of exhaust gases.

CRANKSHAFT

The crankshaft is a steel forging with five main bearings and six counterweights. Shaft length from the flywheel flange to the front edge of the sprocket shaft is 27.2 in., and a journal over-lap of ¾ in. provides increased stiffness.

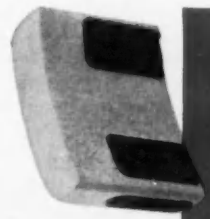
As previously mentioned, all counterweights are cam turned in order to fully realize every possible reduction in engine height. In addition, the cheeks are chamfered to allow the contoured skirts of the pistons to nest closer to their respective crankpins when at bottom dead center. This in turn, shortens the connecting rod length, and further reduces engine height. Depressions are cast in the bottom jacket walls of the cylinder block to allow for clearance with the counterweights.

The rubber and friction type vibration damper used reduces all orders of frequency within the en-

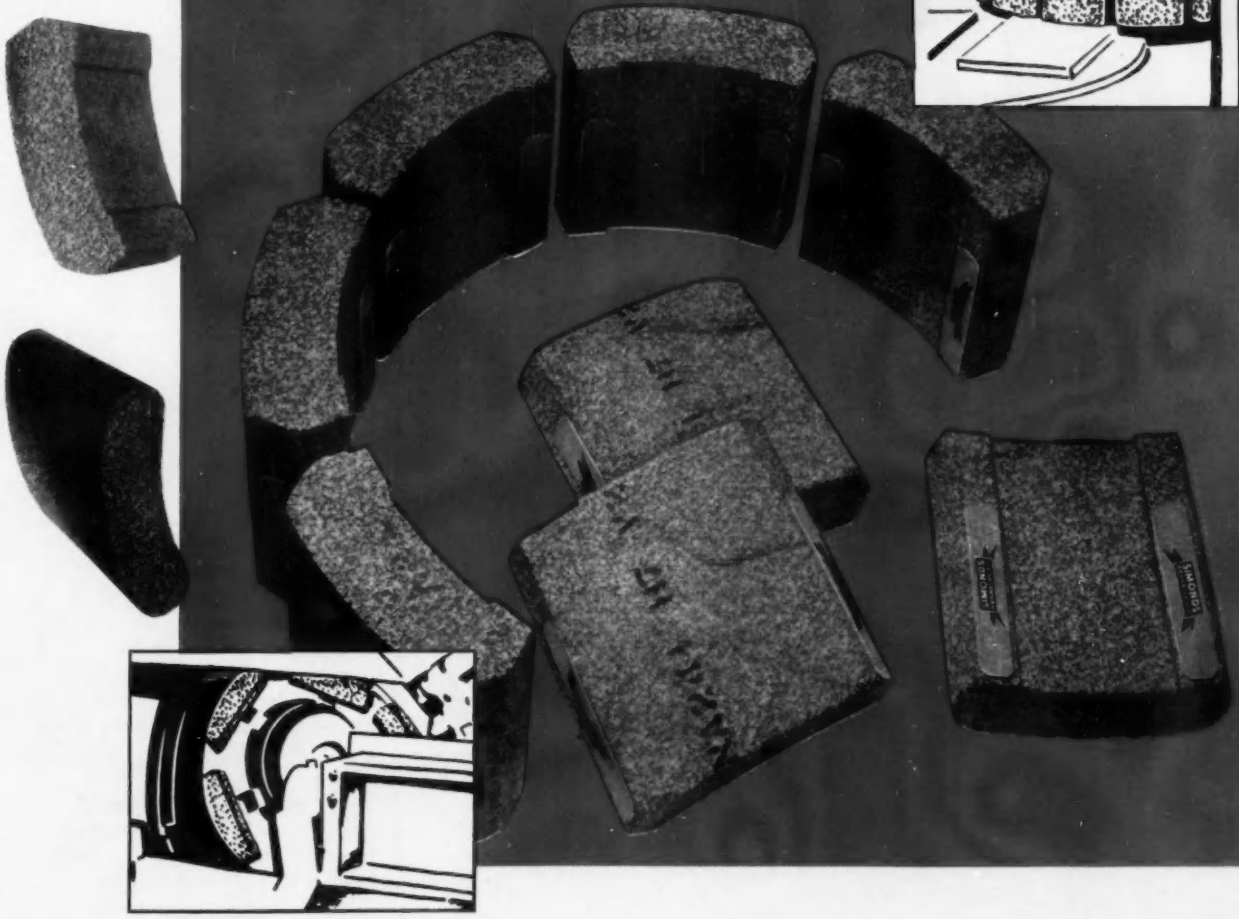
Fast and Free Cutting for Surface Grinding

SIMONDS ABRASIVE CO.

ABRASIVE SEGMENTS







For substantial savings in surface grinding, use Simonds Abrasive Company Segments. Mechanically accurate in shape and size, they fit all segmental chucks, require no sulphuring, and grind more uniformly because of greater uniformity in grade and structure. Use them for gap type segmented wheels for fast, cool stock removal on large size pieces—and for solid type segmented wheels for small pieces chucked together. Write for bulletin ESA—188.

CALL YOUR SIMONDS DISTRIBUTOR

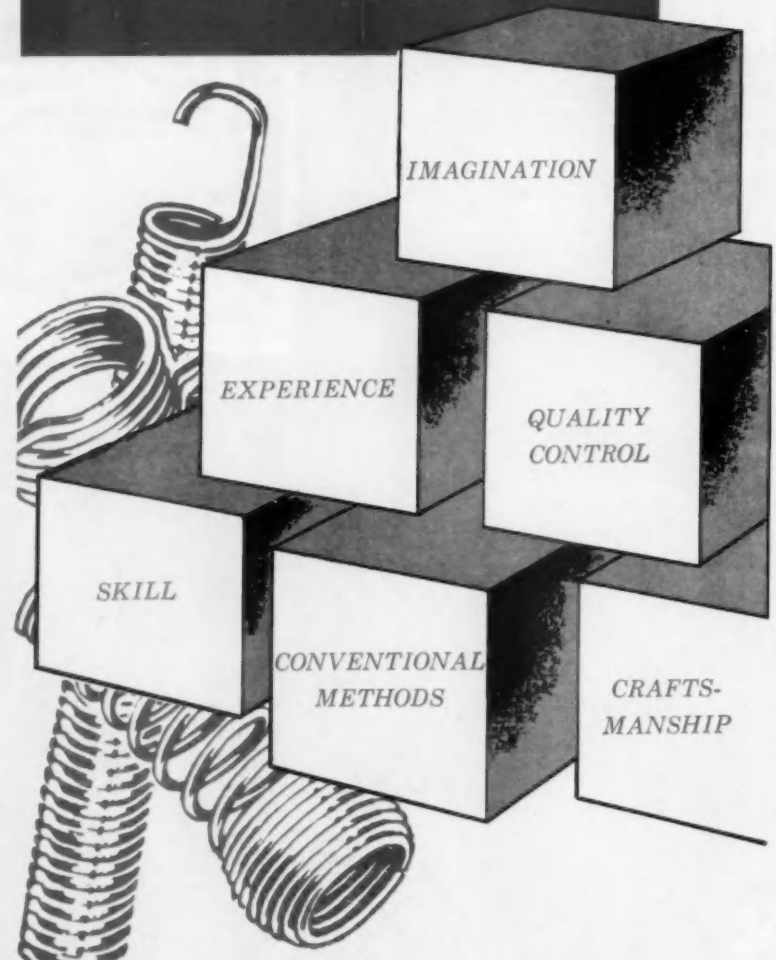
LOCAL STOCK FAST SERVICE

SIMONDS ABRASIVE COMPANY • PHILADELPHIA 37, PA.

Branch Warehouses: Boston, Detroit, Chicago, Portland, San Francisco. Distributors in Principal Cities.

Division of Simonds Saw and Steel Co., Fitchburg, Mass.

BUILDING BLOCKS
for Accurate Springs



Conventional, accepted standards of manufacturing springs are a building block at Accurate Springs. So are skill, craftsmanship, experience, quality control—*and imagination!* It all adds up to a better spring, at lower cost, held to closer tolerances—*for YOU.*

Accurate Springs

ACCURATE SPRING MFG. CO.
3810 West Lake Street
Chicago 24, Illinois

SPRINGS • WIREFORMS • STAMPINGS

gine speed range to negligible amplitudes.

A particularly interesting problem in the design of the engine centered around the balancing of the crankshaft. The crank forging had to contain enough inherent balance control to take care of future displacement requirements. However, at the same time it could not have more overbalance, when used with the engine under discussion, than our balancing equipment could remove. Reciprocating and rotating weights were carefully calculated for all contemplated engines prior to the final approval of the crankshaft design. This design was made in such a manner that no tooling changes will be needed prior to the initial balancing of the crankshaft itself. For engines with displacements of over 250 cu in., a very minor resetting of the balancing equipment is all that is needed.

BEARINGS

Further economy and assembly simplicity has been designed into the engine through the use of bearing interchangeability. All five main bearings diameters are 2.499 in., and with the exception of the front which is flanged to take crankshaft thrust, are interchangeable. Effective bearing area for the intermediate and rear mains is 2.20 sq in., while the front is 2.08 sq in. Full 360 deg grooving is used to make the bearing halves similar, and also to insure adequate flow of oil to the connecting rod at the time of registration for cylinder wall lubrication.

Connecting rod bearing halves are also similar throughout. Bearing diameter is 2.249 in., and effective area is 1.935 sq in.

All bearings are micro-babbitt with steel backs.

COOLING

The illustration shows a cutaway section through the valve centers in the head, and shows the results of the attention given to getting water around the valve seats. Complete jacketing of the cylinders provides cooling for the entire length and circumference of the bores. Water flow has been



Jacobs

serving the
Automotive Industry

Research • Engineering • Manufacturing • Service

since 1913

F. L. JACOBS CO. • EXECUTIVE OFFICES • 1043 SPRUCE STREET • DETROIT 1, MICHIGAN

designed to give complete coverage of the various portions of the engine.

A single, high capacity water pump contains a four in. dia. plastic impeller, and is centrally mounted at the front of the engine. A drilled by-pass is provided for in the water manifold for coolant circulation during cold starts, and prior to the opening of the thermostat.

Heat rejection, and consequent high thermal efficiency and reduced required radiator capacity, has been kept to a low 5300 Btu min. at 4000 rpm.

LUBRICATION

Oil for the engine is picked up by a fixed screen inlet and drawn into the pump. This pump contains sintered iron gears and is an integral part of the rear main bearing cap. This type of design gives us a pump located well up toward the crankshaft center line and allows placing the oil pan sump in a variety of fore and aft locations. This in turn gives a great amount of flexibility with regard to the location of the steering linkage. The pump is driven through a tongue and groove connection with the distributor shaft, and is provided with an oil pressure relief valve.

From the pump, the oil is forced through the filter and into the main oil gallery. Flow is then down to the 7/64 x 5/16 in. annular grooves machined in the camshaft bearing webs, and thence to the main bearings. Except for oil fed to the camshaft bushings, the main bearings are fed prior to any oil being bled off to another location. This assures that the bearings farthest from the pump receive adequate lubrication.

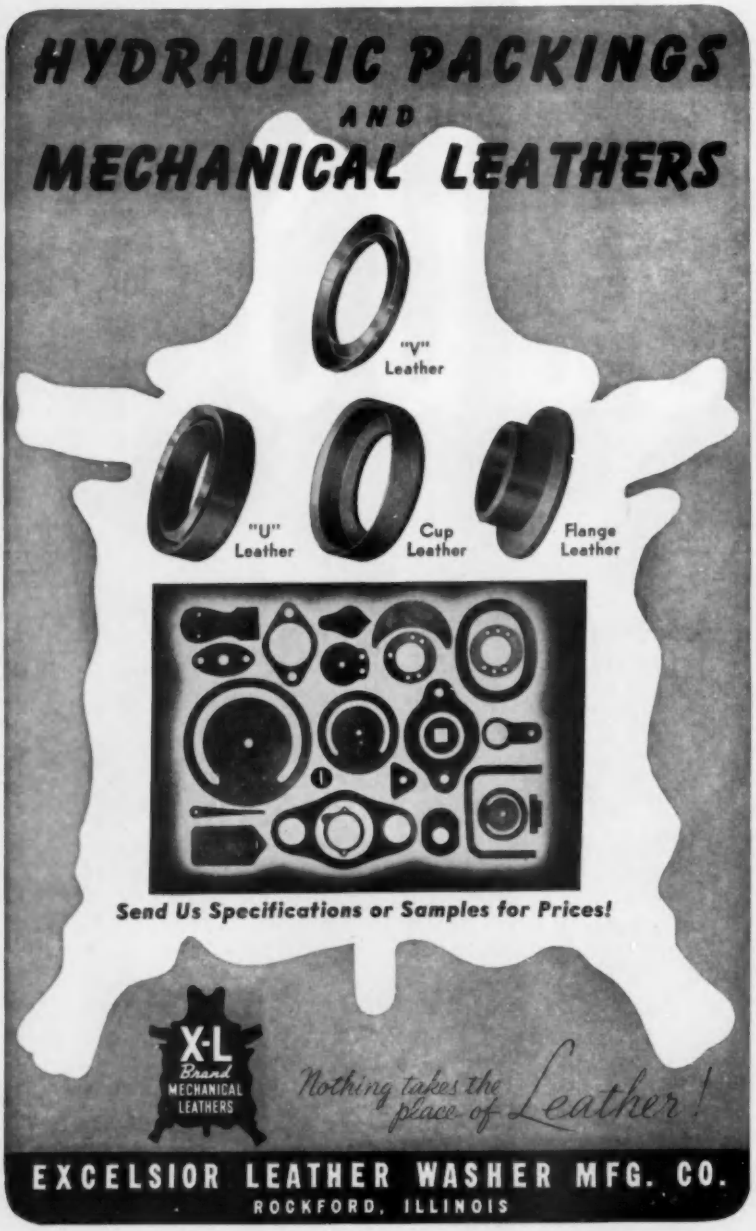
The hydraulic lifters are fed through longitudinal galleries that intersect the lifter bores. These galleries are fed from the main gallery through grooves cast in the cast iron camshaft thrust plate. Due to the fact that no lifter pump-up problems have been encountered in this engine, no attempt has been made to appreciably meter the flow of oil to the lifter galleries.

The hollow rocker arm shafts in each bank receive their oil supply from the lifter galleries, through short drilled holes in the cylinder head and rocker arm support bolts. These bolts are set in oversize drilled holes and the oil is carried around the bolt to the rocker shafts. This movement of oil is located at the rear of the engine in order to provide continuous flow through the lifter galleries and to prevent the formation of sludge traps.

Distributor lubrication is supplied through a drilled hole in the distributor body, which registers with the right hand lifter gallery. Oil is fed through the distributor body into the distributor bushing, and carried to the gears by means of internal grooving in the bushing.

PISTON & RINGS

Following previous American Motors practice, the new V-8 uses aluminum alloy, steel insert, auto-

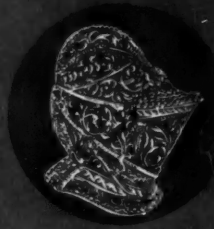


need an idea?

Wean Trapezoidal Shear Line Solves Problem for Auto Maker



The Wean Trapezoidal Shear Line was developed as an answer to the high speed blanking of irregularly shaped pieces in the broad range that can be described as trapezoids or parallelograms. This use reduces tremendously the cost of expensive die setup in major blanking presses. Two pieces are made at each index with the accuracy that can only be achieved by a measured length indexing system. The cut can range from 45° to 90° angles. The latter setting establishes the line as a straight cut-up unit with twice the normal production of conventional shear lines. At Wean, we consider this line as another important step forward in our policy of cost reduction through progressive engineering. People in the automotive and metal fabricating fields have come to look more and more toward Wean Equipment for spectacular advances in machinery for metal processing.



Wean

EQUIPMENT CORPORATION
CLEVELAND, OHIO

Offices:
CLEVELAND • DETROIT • CHICAGO • NEWARK, N.J.
Cable: WEANCOR



I'm sure we can agree that there is as much difference in hose assemblies as night and day — that is, in dependable PERFORMANCE. That's where I would like to help you and save you money. "Anchor" on your Hose Assemblies is certification of a "know-how" that has become a specification with many of the leaders in the automotive field. This experience in design, production and application assures you the proper hose quality and coupling style to scientifically meet your requirements with a maximum service life. This "know-how" is your protection if you will consult with Anchor on all of your needs for Power Steering, Freon and Hydraulic Hose Assemblies, Couplings and Automotive Fittings — you will be pleasantly surprised with the results.

Meanwhile —
let me send you available literature on the standard Anchor Hose Assemblies, Couplings and Fittings applicable to your needs.

Power Steering Assemblies —
are designed and produced to your specifications, but are briefly covered in **Catalog No. 600.**

Freon Assemblies —
Catalog No. 600.

Automotive Fittings —
Catalog No. 600.

Hydraulic (pressed-on and reusable) couplings and assemblies
Catalog No's. 100, 300 and 400.

Send me the specification on your current requirements for recommendation.

Andy Anchor

ANCHOR COUPLING CO. INC.
350 North Fourth Street Libertyville, Illinois
Branch Offices: Dallas, Tex.; Plymouth, Mich.

thermic pistons. These pistons have slippered skirts, are tin-plated, and have the piston pin boss holes bearingized after plating. The latter assures an accurate bearing area for the pin, and helps prevent scuffing.

These pistons are of the double slot design, and have three vertical ribs joining the head and pin bosses. These ribs support the bosses and tend to reduce deflections during the periods of high pin loading. The slipper type skirt is shaped to match closely with the contoured counterweights of the crankshaft when the piston is at bottom dead center. This serves to further reduce the required height of the cylinder block.

The piston carries a head thickness of 0.25 in. to allow for its use with compression ratios well above the current 8.0-1. A 0.0625 in. offset of the piston pin toward the major thrust face, gives exceptional freedom from "piston slap." Piston finished weight is 511 grams and the balancing lugs allow for 31 grams of weight control.

Three rings are used. The compression rings are 5/64 in. wide alloy iron, with the top ring having a 0.004-0.007 in. thick, lapped chrome plating. The oil control ring is of the three piece design made up of two rails and a spring steel spacer. The rails carry buffed 0.0025 in. min. chrome plating on their reacting faces.

VALVE TIMING

Due to the relatively large valves used with the present displacement, valve timing can be kept to conservative values. A top center valve overlap of only 23 deg has proved to be ample for high speed breathing, and resulting "high end" performance. This small overlap gives the engine excellent idling characteristics and "low end" output.

VALVE TRAIN

The camshaft is an alloy iron with five bearings, and is chain driven. All lobes carry a 15-max micro-inch finish, and the cams are ground with a 0.001-0.002 taper per inch. The latter together with



Electrical Discharge Machining

saved $448 sinking this forging die using BRASS electrodes

Conventional Method

Mill Cavity (Man and Machine)	56 hours
Hand Finish (Experienced die sinker)	52 hours
TOTAL	108 hours

ELOX method

Forge Electrode (Man and machine)	2 hours
Set up and change electrodes (man and machine)	8 hours
Machine hours only (no operator required)	32 hours
Hand finish after E.D.M.	2 hours
TOTAL	44 hours

Saved: 64 hours at $7 per hour

additional EDM advantages in forge die machining:

- Dies are fully heat treated prior to machining thus eliminating possible distortion.
- Resizing forging dies after washout can be done within two hours.
- Inherent workhardening values are retained in the dies since no additional re-heat treating is necessary.
- Actual die life is increased.
- Many forge die alloys are self-polishing after EDM.

This machining application is one of many time and material saving jobs being turned out by the standard Elox M-500 Electronic Machine Tool. See EDM in operation at Elox Demonstration Centers.

*T.M. Reg.

elox

corporation of michigan

1827 Stevenson Hwy.
Royal Oak 3, Mich.

Elox Electron Drills for removing broken taps, drills, etc., from $495 to $3450.

DEMONSTRATION CENTERS

Plant—Royal Oak, Mich.
45 Broad Ave., Palisades Park, N.J.
1907 W. Monterey, Chicago, Ill.

THIS IS FOR MEN...



. . . who are interested in the advantages of of PEARLITIC MALLEABLE CASTINGS

● You can slash production, machining and assembly costs with Albion Pearlitic Malleable Iron Castings. And, here's why:—

. . . Albion's pearlitic malleable irons offer complete freedom of design for greater savings in machining time, the elimination of excess metal and lower finished part cost.

. . . Albion's pearlitic malleable irons afford unusually fine wear resistance with excellent bearing properties. Maximum rigidity and prolonged fatigue life offers outstanding endurance. Yield strength comparable to steel forgings.

. . . Albion's pearlitic malleable irons have a fine, uniform grain structure that machines easily and accurately with exceptional mirror-smooth finishing qualities. Extremely adaptable to localized hardening for specific needs.

Contact the Albion Malleable Iron Company now . . . they'll be glad to show you how many ways Albion's pearlitic irons can save you time, tools and dollars.

Remember . . . Albion's Research and Development Laboratory facilities and competent engineering staff are ready to help you design better products that can be made at lower cost.



ALBION MALLEABLE IRON CO.

Albion, Michigan

spherical lifter faces and offset center lines, insures positive lifter rotation.

In order to further obtain quiet operation and peak performance, hydraulic lifters are used. Lifter bodies are hardenable iron, with a face hardness of 54 Rockwell C min, and are lubrited for improved break-in. Pushrod sockets are case hardened steel, and a lifter internal operating range of 0.100 in. is available. Critical pump-up speed for these tappets has been found to be well over 5000 rpm engine speed.

Rocker arms are cast pearlitic, malleable iron, and are extremely short to further reduce valve train deflection. The arms are lubrited after finishing to help reduce scuffing of the rocker shaft.

The intake valves, which are made of silchrome No. 1 steel, have 1.787 in. diameter heads and 30 deg seat angles. The exhaust valves are of the two piece construction with the head and upper stem made of SAE 2112 N steel. Exhaust valve head diameter is 1.406 in., and both valves operate with a 0.375 in. lift.

The peak horsepower of 190 is obtained at an engine speed of 4900 rpm. The friction horsepower reaches a value of only 34 hp at 4000 rpm.

BOOKS . . .

MONOPOLY IN AMERICA, *by Walter Adams and Horace M. Gray, published by The MacMillan Co., 60 Fifth Ave., New York 11, N. Y. Price, $3.50.* In this challenging book the authors take a refreshingly new, yet realistic, look at the problem of Government policy toward business. Federal policy, the authors argue, largely determines whether enterprise is to be free and competition effective, or whether bigness is, indeed, to be the wave of the future. Monopoly, in their view, is neither inevitable nor desirable but arises from misguided public policies. Corporate concentration, they say, can no longer be explained in terms of economic imperatives, private conspiracies, or monopolistic mergers but is too often the outgrowth of unwise, discriminatory, privilege-creating Governmental measures which throttle competition and restrict opportunity. The Government thus actually promotes monopoly. The authors support their argument by examining specifically the impact of Government policy on taxation and expenditures, the distribution of defense contracts, the regulation of public utilities, the disposal of surplus property, and atomic energy legislation. More competition, they say, will give the public better protection than more regulation.

DU PONT
Better Things for Better Living
. . . through Chemistry

AUTOMOTIVE ENGINEERING NEWS

PROPERTY AND APPLICATION DATA
ON THESE VERSATILE ENGINEERING MATERIALS:
"ZYTEL," "ALATHON," "TEFLON," "LUCITE."

The beauty and durability of LUCITE® offer increasing design opportunities

Parts of TEFLON® offer lowest coefficient of friction

Du Pont's "Teflon" tetrafluoroethylene resin has the lowest coefficient of friction of any solid in commercial use. "Teflon" has a static coefficient of friction of 0.1 (inclined plane method), while kinetic coefficients as low as 0.04 have been measured. It has an exceptionally broad temperature service range – from –450°F. to 500°F. It is completely inert to all chemicals and solvents, being affected only by molten alkali metals, and by fluorine gas under special conditions. It has negligible water absorption, and is unaffected by outdoor weathering.

The Lincoln-Mercury designers took advantage of the unique properties of "Teflon," using it as a bushing on a clutch-lever assembly. Original planning called for a bronze bushing, but the proximity to the exhaust pipe presented problems of extreme heat as well as difficult lubrication. A wrap-around bushing of "Teflon" successfully solved both problems and provided a saving of two cents per unit.

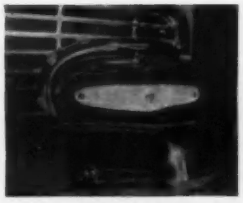
This example, typical of the success possible with "Teflon," accounts for the increasing number of automobile engineers considering "Teflon" for future use.



Parking light of "Lucite" is heat-resistant, withstands impact and is shatterproof.



Medallion of "Lucite" adds color and long-lasting beauty to manufacturer's emblem.



Taillights of "Lucite" give sparkling visibility in all weather – resist crazing and cracking.



Instrument panels on 1956 model automobiles utilize the lasting beauty of Du Pont "Lucite" acrylic resin. "Lucite" can be easily formed into desired shapes.

"Lucite" acrylic resin offers particularly exciting challenges to the automotive designer. Available in a wide range of transparent, translucent, and opaque colors, "Lucite" can be molded into almost any size and shape. Its unusual "edge-lighting" and "light-piping" characteristics make it adaptable to a variety of light-transmission effects. This is illustrated in the instrument panels and dials on the latest model automobiles.

Mechanically, "Lucite" is shatter-resistant and light in weight – about one-third as heavy as glass. Its beauty and clarity are virtually unimpaired by years of outdoor exposure. It has good dimensional stability and resistance to automotive solvents.

Perhaps an imaginative use of "Lucite" will be the answer to your next design problem.

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department
Room 174 Du Pont Building, Wilmington 98, Delaware

In Canada: Du Pont Company of Canada Limited, P.O. Box 660, Montreal, Quebec

Please send me complete property and application data on Du Pont "Lucite" ☐ "Teflon" ☐
I am interested in evaluating these materials for
_____
_____

Name_____
Firm Name_____
Position_____
Type of Business_____
Street Address_____
City_____ State_____

AIRBRIEFS

(*Continued from page 378*)

Calculated Flight Tests Of New Aircraft

In Cincinnati, Ohio, the computing section at General Electric Company's jet engine plant is using an advanced type of electronic calculator to put an idea-design airplane through an automatic simulated flight test. Only a few hours of computer time is required to obtain flight test information on a proposed combination of engines and airframe.

Such results as rate of fuel consumption at any airplane speed and altitude, power required for various flight altitudes and speeds, operating limits of the airplane and other information are needed by the designers to secure the best design combination.

About three weeks' time is required by engineers and mathematicians to transfer airframe and engine information onto the computer cards. These cards, fed to the electronic computer, direct the machine to produce the desired simulated flight data.

Bullet Protection For Troops and Police

A new body armor has been developed which will stop a .45 calibre bullet when fired at close range and which is 70 per cent effective against shrapnel. It is a laminated plastic product, cross-lapped for super strength, with a binder of high quality polyester resin. Produced by Air Cruisers Company, Belmar, N. J., the material is called Doron Body Armor.

Made into squares 15¼ in. by 5¼ in. and ⅛ in. thick and curved to fit close to the body, the Doron pieces are sewed into a jacket by overlapping one another like the scales of a fish.

Work is now underway by Air Cruisers to develop other ballistic material for aircraft armor and for deck and gun emplacements on small ships.

Okanagan Helicopters To Train Pilots

A pilot training program has been instigated by Okanagan Helicopters of Canada. They will be training pilots for the U. S. Army Transport Command, the French Air Force and the Indonesian Air Force.

Okanagan is the largest private operator of helicopters. They just purchased a new Sikorsky S-58 from Canadian Pratt and Whitney Co. It can carry a payload of 4000 lb or carry 12 passengers with baggage plus a two man crew. Top speed is 132 mph. Price tag—$250,000.

"A Truly Decisive Air Force"

The above is a part-line quote from a talk presented early this winter by Donald A. Quarles, Secretary of the Air Force, made before a meeting of the Aviation Writers Association in Washington, D. C. The Secretary had just completed a tour of U. S. Air Force bases in Europe. After speaking about his tour and the determination to continue a 137 wing air force program he concluded his remarks by saying, "The road to peace and disarmament is long and tortuous; and meanwhile, we must maintain our strength at the ready. In fact, the best likelihood for continued world peace is our maintenance of *a truly decisive air force*—a condition under which an aggressor will know beyond the shadow of a doubt that we possess the certain ca-

Depend on EUREKA RADIATORS
for RUGGED ENDURANCE & MAXIMUM COOLING



EUREKA

OVER 30 YEARS OF SPECIALIZATION

For over 30 years, EUREKA Cores and Radiators have served the automotive industry with utmost dependability. Our facilities, equipment, and personnel are available for your needs. We welcome the opportunity of integrating our specialized skills with your needs to help you achieve a well-planned production schedule.

What are your requirements? We can build Radiators to your order in any type, to any size or shape. Send us your blueprints for prompt quotations!

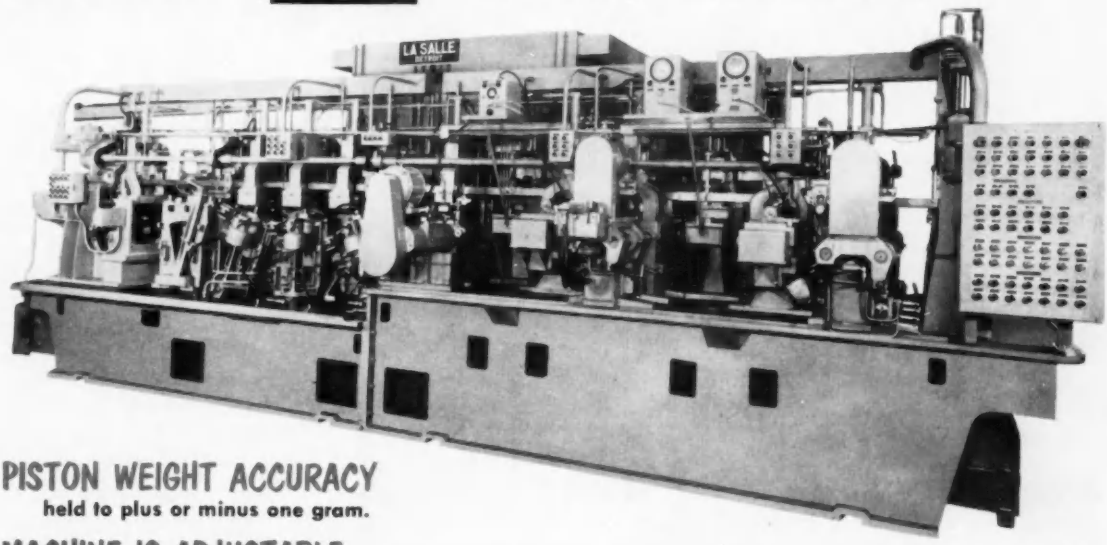


EUREKA RADIATORS AND CORES
for CARS, TRUCKS, TRACTORS and SPECIAL APPLICATIONS.

AUTO RADIATOR Manufacturing Co.
Guaranteed Radiator Cores Since 1915
2901-17 INDIANA AVE. • CHICAGO 16, ILLINOIS

La Salle AUTOMATED PISTON LINE

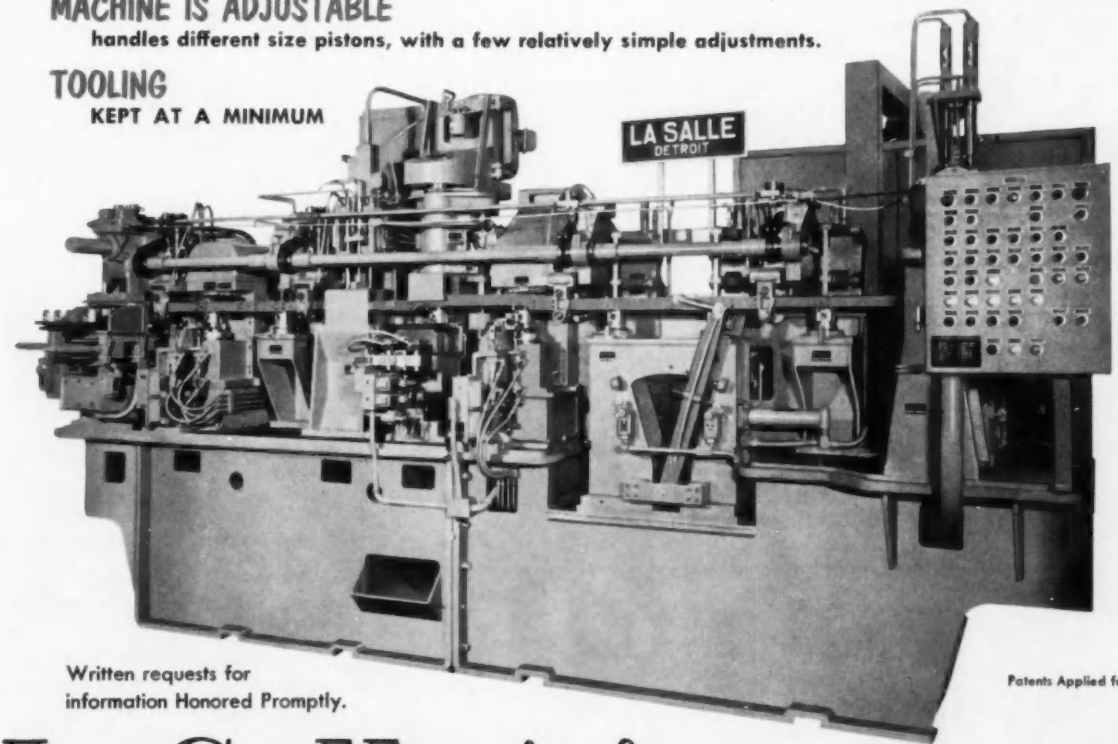
PRODUCES 400 PISTONS PER HOUR



PISTON WEIGHT ACCURACY
held to plus or minus one gram.

MACHINE IS ADJUSTABLE
handles different size pistons, with a few relatively simple adjustments.

TOOLING
KEPT AT A MINIMUM



Written requests for information Honored Promptly.

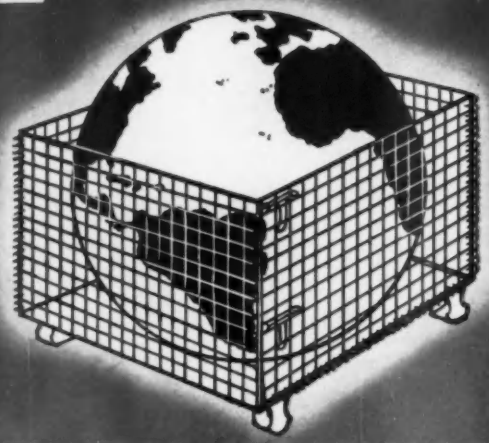
Patents Applied for.

La Salle tool, inc.

ENGINEERING & BUILDING SPECIAL MACHINERY

3840 EAST OUTER DRIVE • DETROIT 34, MICHIGAN

IT IS A SMALL WORLD



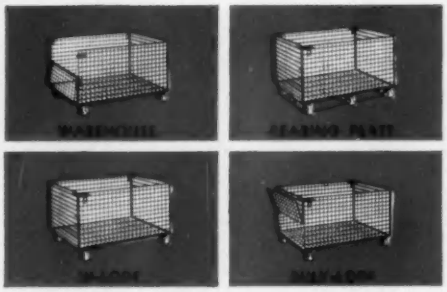
WHEN YOU USE

PALLETAINERS

If TIME, SPACE and TRAVEL are important factors in your plant operation . . . USP Palletainers will help you save all three! Palletainers meet all plant needs for faster, more efficient, low cost handling; they offer greater stacking safety with amazing space savings; and . . . they're a proved method of keeping parts or finished products moving smoothly, safely through production, assembly, temporary storage, interplant or long distance hauling.

USP Palletainers will save your handling TIME, save your valuable floor SPACE and protect your products' TRAVEL. Why not see for yourself?

USP Palletainers are available in the broadest range of sizes, types and capacities to suit your particular needs. Regular models incorporate the exclusive Palletainer leg, lock, retainer link and flat-fold side features. All models fold down to save 75% of return shipping.



Gentlemen: Please send me additional information on USP Palletainers at once.

Name _____ Title _____

Company _____

Address _____

City _____ Zone ____ State _____

☐ Please have a Palletainer representative call upon us.

UNION STEEL PRODUCTS COMPANY

ALBION, MICHIGAN

pability of destroying him if he should attack.

"If he, too, should acquire this capability, we will be no less secure so long as we maintain the power to retaliate decisively. The proposition creates a stalemate through deterrent strength, which I believe is, paradoxically, our best hope for peace.

"An indispensable corollary to this proposition is that we must maintain our relative position in technological development to preclude the possibility that the other side might achieve some major breakthrough which will upset the balance."

New Defense Facilities

SUPPLEMENTING the list of Certificates of Necessity issued up to Jan. 11, authorizing new or expanded defense plant facilities for the manufacture of automotive and aviation war goods which was published in the Feb. 15 issue, page 154 of AUTOMOTIVE INDUSTRIES, the following additional certificates were announced by the Office of Defense Mobilization, covering the period which extends from Jan. 12 to Feb. 8, inclusive.

The figure appearing in parentheses is the percentage authorized in respect to actual fast tax write-offs.

AIRCRAFT PRODUCTS COMPANY, Bridgeport, Pa.
Military aircraft parts—$17,739 (70)

BELL AIRCRAFT CORP., Wheatfield, New York
Military aircraft—$169,356 (65)

BENDIX AVIATION CORP., Bendix Products Div., South Bend, Ind.
Aircraft parts—$146,955 (65)

BENDIX AVIATION CORP., Bendix Radio Div., Towson, Maryland
Research and development—$1,712,000 (40)

BENDIX AVIATION CORP., Pioneer-Central Div., Davenport, Iowa
Aircraft instruments—$229,000 (40)

BENDIX AVIATION CORP., Scintilla Div., Sidney, New York
Military aircraft engine parts—$551,331 (65)

THE CORNELIUS COMPANY, Minneapolis, Minnesota
Military aircraft equipment—$45,345

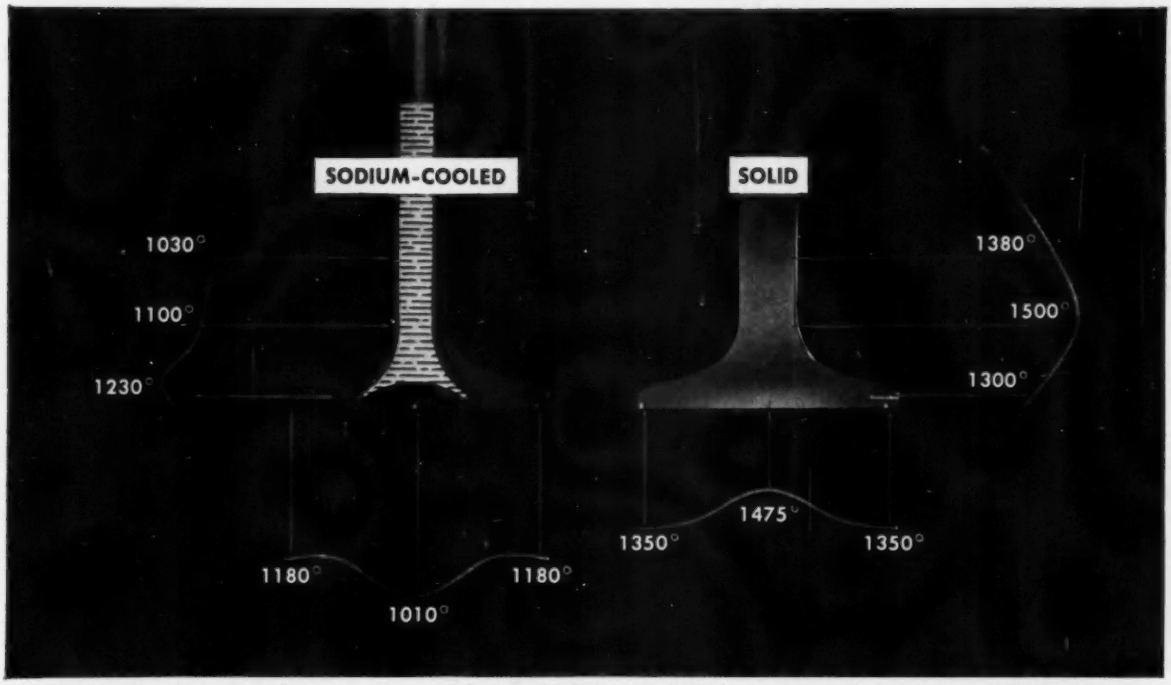
FAIRCHILD ENGINE AND AIRPLANE CORP., Fairchild Aircraft Div., Hagerstown, Maryland
Military aircraft—$60,000 (60)

FAIRCHILD ENGINE AND AIRPLANE CORP., Stratos Div., Bay Shore, L. I., New York
Aircraft and parts—$72,922 (65)

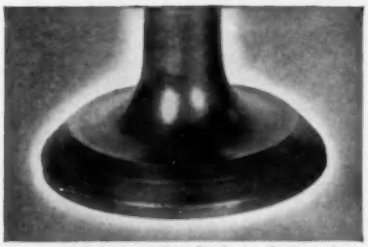
GENERAL DYNAMICS CORP., Convair Div., San Diego, Calif.
Engineering test laboratory—$145,000 (60)

(Turn to page 457, please)

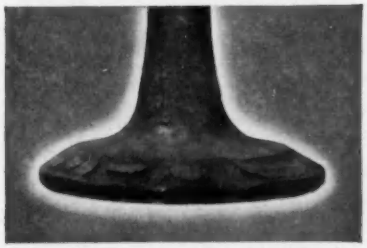
Eaton Sodium-Cooled Valves Run Cooler—



These curves show operating temperatures of Sodium-Cooled and Solid Valves under similar conditions of high output.



Eaton Sodium-Cooled Valve after 110,000 miles—still in good condition.



Conventional valve after 35,000 miles in same type of operation as Sodium-Cooled Valve shown above.

Cooler Valves Last Longer

Today's trend in engine design toward higher speeds and more economical fuel-air ratios results in higher temperatures for many operating parts—including exhaust valves. These higher temperatures sharply reduce valve resistance to corrosion and distortion, definitely limiting valve life. Eaton Sodium-Cooled Valves, operating at considerably lower temperatures, maintain corrosion resistance and strength.

In general, maintenance of Eaton Sodium-Cooled Valves in heavy-duty truck engines is scheduled only at time of major engine overhaul. No in-between trips to the shop are necessary for valve servicing. Engine output is maintained at high levels over long mileages. In many millions of miles of heavy-duty operation, Eaton Sodium-Cooled Valves have proven their ability to keep trucks on the road and out of the shop.

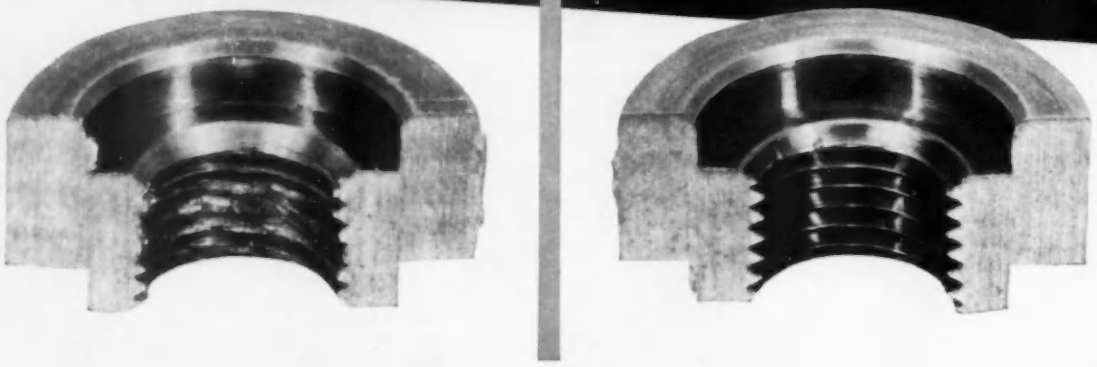
Eaton engineers will be glad to work with you in applying the benefits of Sodium-Cooled Valves to your engines.

EATON

VALVE DIVISION
MANUFACTURING COMPANY
9771 FRENCH ROAD • DETROIT 13, MICHIGAN

PRODUCTS: Sodium Cooled, Poppet, and Free Valves • Tappets • Hydraulic Valve Lifters • Valve Seat Inserts • Jet Engine Parts • Rotor Pumps • Motor Truck Axles • Permanent Mold Gray Iron Castings • Heater-Defroster Units • Snap Rings Springtites • Spring Washers • Cold Drawn Steel • Stampings • Leaf and Coil Springs • Dynamatic Drives, Brakes, Dynamometers

Why BALANCED CHEMICAL ACTIVITY in a cutting oil?



Left. Cupro-nickel bushing, cut in half to show internal threads, produced with a competitive straight oil.

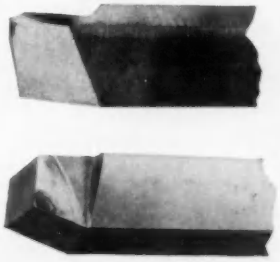
Right. Same type cupro-nickel bushing produced with Stuart's Thredkut X-18—providing controlled chemical activity.

The touch of a cutting oil with *balanced* chemical activity is easily recognized. It's the exceptionally smooth, satiny finish on part after part, even from soft, tough, stringy material . . . and increased tool life.

Stuart's Balanced Cutting Oils have controlled active sulphur and chlorine held in true chemical combination. Each oil is balanced to meet a specific range of job requirements from tapping, threading, gear shaping and gear hobbing to general purpose automatic screw machine work. Stuart oils with high sulphur activity are processed for the more difficult machining of soft, tough, stringy materials such as low carbon and stainless steels, monel metal and jet engine alloys. Oils with lower sulphur activity are designed for high speed machining of free-cutting materials such as B1112, B1113, leaded screw stocks, brass and aluminum alloys.

The "active" sulphur content of Stuart's Balanced Cutting Oils, as opposed to "lazy" sulphur, provides the anti-weld qualities that are so necessary to obtain smooth finishes. The active chlorine and fatty oil content provides the improved lubricity and temperature control to assure the best possible results in production.

Have "the Man in the Barrel", your Stuart Representative, assist you in selecting the right cutting oil for your job. Write for Stuart's Cutting and Grinding Fluid Selector and Dilut-O-Graph Folder, too. It's a quick guide to starting recommendations on any job.



Top: Abnormal front clearance wear of cutting tool caused by excessive sulphur activity of cutting fluid.

Bottom: Cratering of cutting tool caused by insufficient sulphur activity.

D. A. STUART OIL CO., LTD., 2733 S. Troy St., Chicago 23, Ill.

More than a "Coolant" is Needed



Stuart Oils

Plants in: Chicago, Detroit, Cleveland, Hartford, and Toronto, Ontario.

Branch Warehouses and Representatives in principal metal working centers in the United States, Canada and Europe.

Time Tested Cutting Fluids and Lubricants

(*Continued from page* 454)

GOODYEAR AIRCRAFT CORP., Akron, Ohio
Aircraft parts—$232,854 (65)

GOODYEAR TIRE & RUBBER CO. OF CALIFORNIA, Los Angeles, Calif.
Aircraft parts—$230,050 (65)

C. B. KAUPP & SONS, Maplewood, New Jersey
Military aircraft instruments—$153,186 (70)

KEARFOTT COMPANY, INC., Little Falls, New Jersey
Military aircraft instruments—$49,776 (65)

KELSEY-HAYES WHEEL CO., Jackson, Michigan
Aircraft engine parts—$750,000 (40)

NORTHROP AIRCRAFT, INC., Hawthorne, Calif.
Military aircraft—$88,956 (65)

QUALITY CONTROL CORP., Harwood Heights, Ill.
Aircraft parts—$103,000 (55)

ROHR AIRCRAFT CORP., Riverside, California
Military aircraft parts—$111,628 (65)

THOMPSON PRODUCTS, INC., Cleveland, Ohio
Military aircraft engine parts—$1,936,-019 (65)

UNITED AIRCRAFT CORP., Hamilton Standard Div., Windsor Locks, Conn.
Military aircraft parts—$345,657 (65)

THE UNITED TOOL & DIE CO., West Hartford, Conn.
Aircraft parts—$76,750 (70)

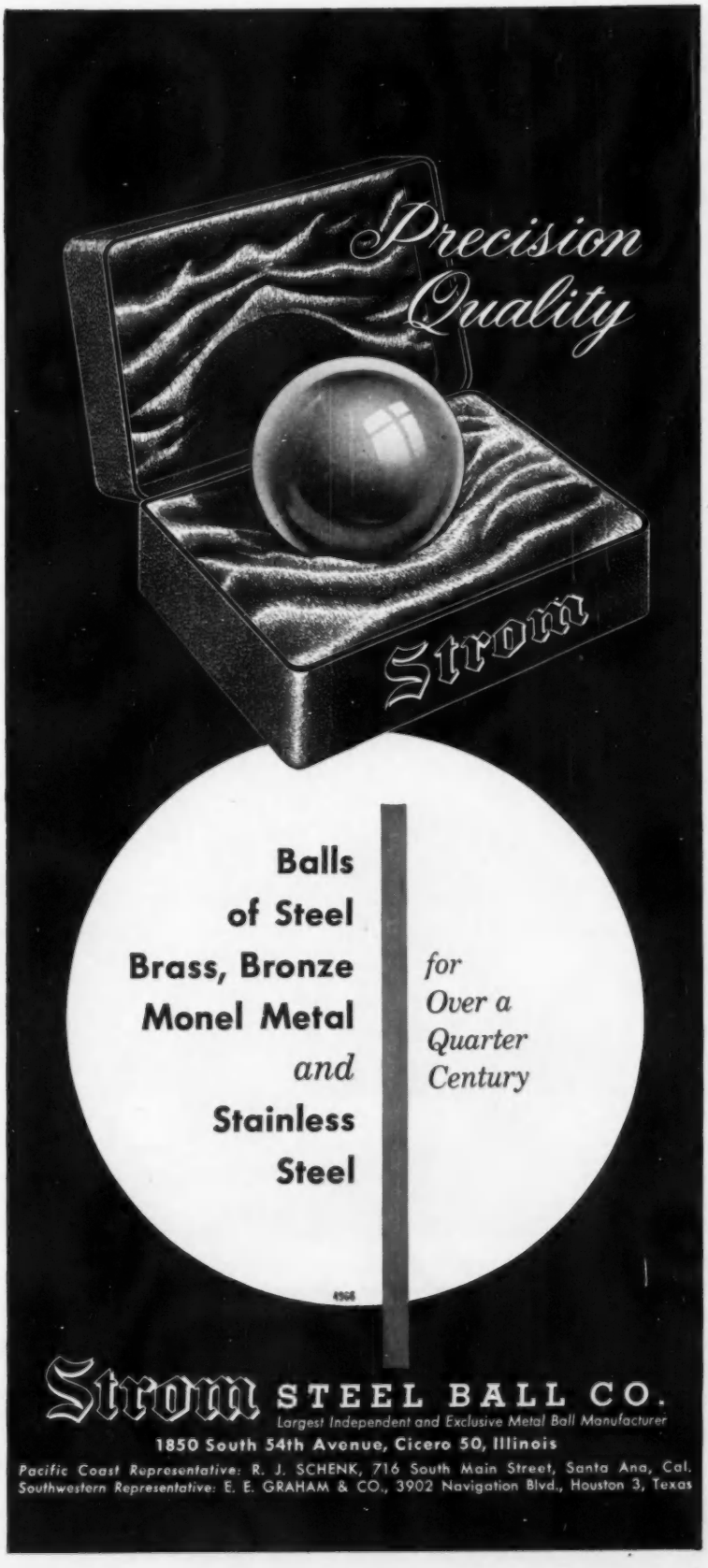
WALDORF INSTRUMENT CORP., Huntington Station, New York
Aircraft accessories—$91,708 (70)

THE WHELAND COMPANY, Chattanooga, Tennessee
Aircraft parts—$235,000 (65)

BOOKS . . .

SPONTANEOUS IGNITION OF LIQUID FUELS, *by B. P. Mullins, published by Butterworths Publications Ltd., London, England, available from Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y. Price, $2.75.* Sponsored by the combustion panel, Advisory Group for Aeronautical Research and Development of NATO, this book deals with the spontaneous ignition of combustibles. Temperature data for 433 substances, comprising more than 900 entries, is included in one chapter. Other chapters deal with general theoretical considerations, fuel additives, and applications of spontaneous ignition data.

CHEMICAL REACTIONS IN FLOW SYSTEMS, *by S. S. Penner, published by Butterworths Publications Ltd., London, England, available from Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y. Price, $3.00.* Intended as an introduction to the study of chemical reactions in moving ideal gas mixtures, this book presents a summary of the principles of classical chemical kinetics and basic material for formulation of flow problems with chemical reactions. Preparation of the work was sponsored by the Air Research and Development Command, U. S. Air Force.



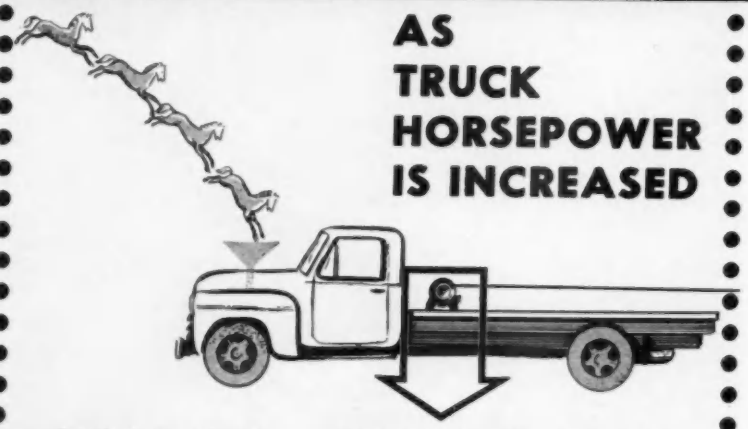
More Government Contract Awards

THIS latest list of Government prime contracts that have been awarded covers the period from Feb. 1 to Feb. 27, 1956. Items included in this list are for various types of automotive military equipment, including tanks, motorized gun carriages, trucks, airplanes, automotive components and spare parts, automotive maintenance equipment, etc.

AEROQUIP CORP., Jackson, Michigan
Hose assy.—61,736 ea.—$340,855

AIR CARRIER SERVICE CORP., Washington, D. C.
Aero commander airplane—1 ea.—$95,322

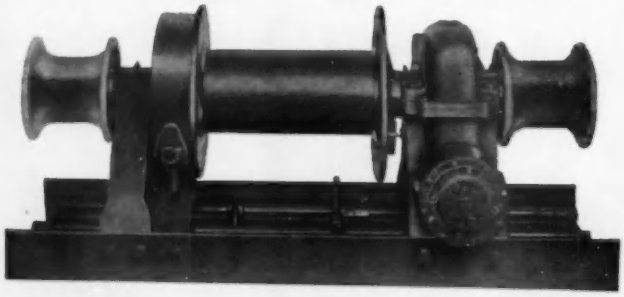
AVCO MANUFACTURING CORP., Cincinnati, Ohio
Bomber fire control system—93 ea.—$10,000,000



AS TRUCK HORSEPOWER IS INCREASED

TULSA® WINCHES

ARE STRENGTHENED AND IMPROVED TO TAKE ADVANTAGE OF THIS AVAILABLE POWER



Over 28 models to choose from with capacities from 6,000 to 100,000 pounds . . . breaking point is OVER TWICE the rated capacity. See your nearest TULSA WINCH distributor for complete details.

Tulsa Winch
TULSA, OKLAHOMA DIVISION OF VICKERS Inc.

THE BAKER RAULANG COMPANY, Cleveland, Ohio
Truck, fork, gasoline—16 ea.—$50,130
Truck, industrial—51 ea.—$111,368

BENDIX AVIATION CORP., Bendix Products Div., South Bend, Ind.
Wheel, brake assembly—$5,277,253
Fuel controls—various—$251,049

BENDIX AVIATION CORP., Eclipse-Pioneer Div., Teterboro, N. J.
Air speed tester—543 ea.—$113,401

BENDIX AVIATION CORP., Scintilla Div., Sidney, New York
Distributor assy.—various—$60,802

THE BUDD COMPANY, Detroit, Michigan
Stud, wheel rim—355,000 ea.—$72,349

CATERPILLAR TRACTOR COMPANY, Peoria, Illinois
Tractor—9 ea.—$174,401

CENTRAL FIRE TRUCK CORP., St. Louis, Missouri
Truck, fire—10 ea.—$103,380

CESSNA AIRCRAFT COMPANY, Wichita, Kansas
Airplanes—$500,000

CHRYSLER CORPORATION, Detroit, Michigan
Spare parts—5045 ea.—$33,146

CHRYSLER CORP., Airtemp Div., Dayton, Ohio
Ballistic drives—700 ea.—$114,604

CIRCO EQUIPMENT COMPANY, Clark (Rahway Township, New Jersey)
Degreaser, vapor type, electric heated—111 ea.—$165,836
Degreasers—various—$41,851

CLEVELAND PNEUMATIC TOOL CO., Cleveland, Ohio
Aircraft parts—$118,502

CONTINENTAL AVIATION & ENGINEERING CORP., Detroit, Mich.
Parts—100 ea.—$35,826
Development V-12 cylinder—$299,999

CONTINENTAL MOTORS CORP., Detroit, Michigan
Tank engine spare parts—various—$36,431

COOPER TIRE & RUBBER CO., Findlay, Ohio
Tire—33,000 ea.—$826,980

CURTISS-WRIGHT CORP., Wright Aeronautical Div., Wood-Ridge, N. J.
Overhaul of aircraft engines—50 ea.—$340,000

ELECTRIC AUTO-LITE COMPANY, Toledo, Ohio
Starter assemblies—$205,499

FARGO MOTOR CORP., Washington, D. C.
Trucks—13 ea.—$29,254
Buses—3 ea.—$20,024

THE FIRESTONE TIRE & RUBBER CO., Akron, Ohio
Shell, heat—129,000 ea.—$2,200,740
Rubber capping—$86,690

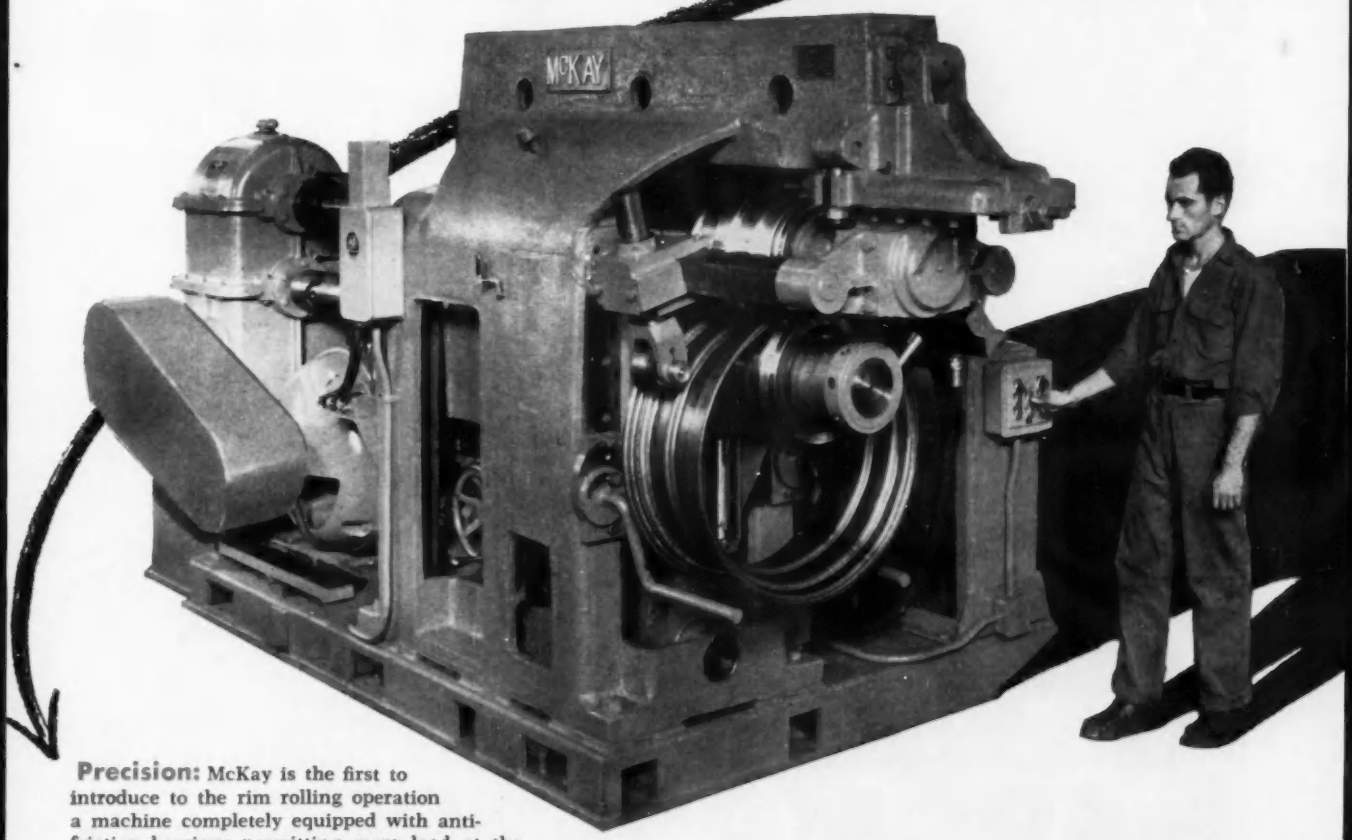
FORD MOTOR CO., Ford Div., Washington, D. C.
Light trucks—501 ea.—$642,433
Automobiles—44 ea.—$58,287

GENERAL MOTORS CORP., Allison Div., Indianapolis, Ind.
Turbo-prop engines—$31,905,800
Sleeve, assy.: transmission—78 ea.—$29,234
Cover assy. with brakes—$283,067

(Turn to page 460, please)

4 REASONS Why Wheel Manufacturers Specify

McKAY RIM ROLLERS



Precision: McKay is the first to introduce to the rim rolling operation a machine completely equipped with anti-friction bearings permitting more load at the work rolls and practically eliminating maintenance. Precision setup of work roll shafts is accomplished either manually or by motor-operated screw adjustment of toggles, permitting the exceptional accuracy needed for the production of rims for tubeless tires.

Ruggedness: A one-piece, cast steel housing absorbs all work loads. A 2-Hi, oil-tight gear case drives both work roll shafts through husky universal spindles providing quiet trouble-free operation.

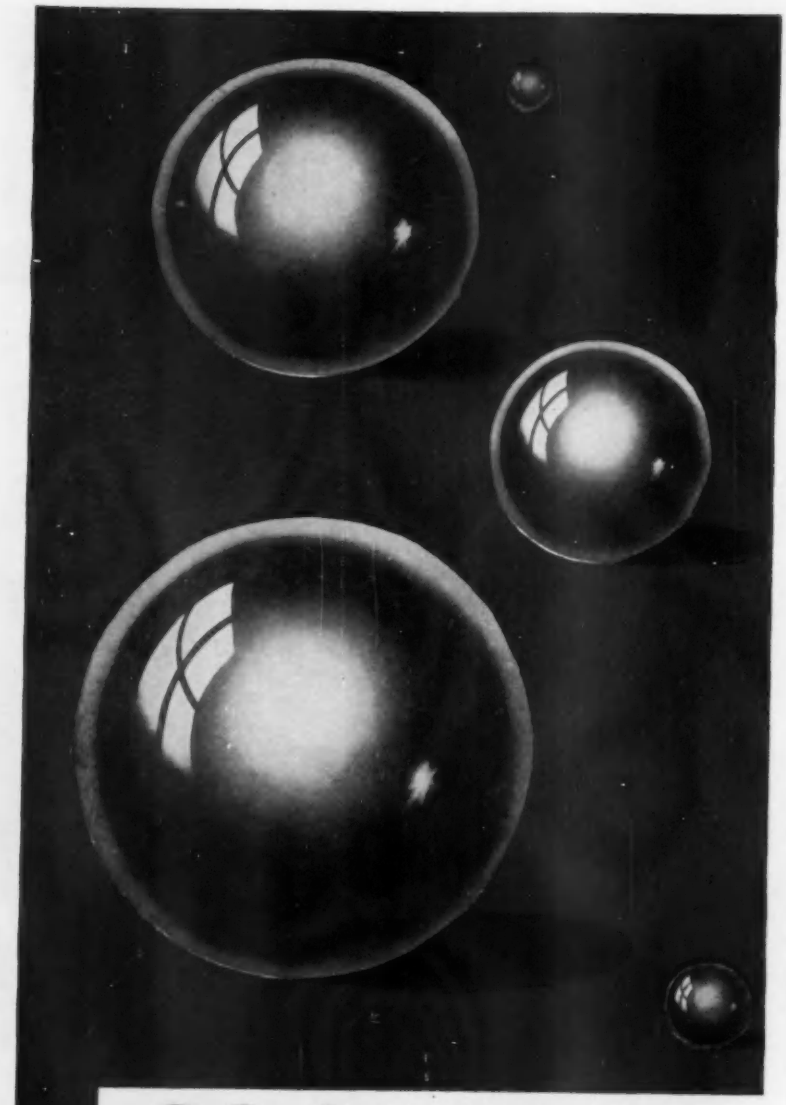
Performance: Accurate, repetitive cycling is assured by solenoid-controlled hydraulic four-way and flow control valves. An electric timer determines the dwell period of the rim rollers under full load at full depth.

Compact Design: All equipment is mounted on a single base, including the hydraulic power unit and valve panel as well as the electrical equipment and controls. Only 70 square feet of floor space required. A simple connection to your power source and you're in business.

ENGINEERS AND DESIGNERS OF
EQUIPMENT FOR THE AUTOMOTIVE,
FABRICATING AND STEEL INDUSTRIES

McK

The McKAY MACHINE *Company*
YOUNGSTOWN, OHIO



COOLIDGE
Balls

CHROME ALLOY AND STAINLESS

COOLIDGE CORPORATION
MIDDLETOWN, OHIO

(*Continued from page* 458)

GENERAL MOTORS CORP., Allison Div., Aeroproducts Operations Div., Dayton, Ohio
Propeller assembly—1 ea.—$106,050

GENERAL MOTORS CORP., Chevrolet Motor Div., Detroit, Mich.
Light trucks—265 ea.—$344,279
Automobiles—221 ea.—$266,866

GENERAL MOTORS CORP., Cleveland Diesel Engine Div., Cleveland, Ohio
Spare parts for engines—$116,935
Repair parts for Diesel engines—various—$535,588

GENERAL MOTORS CORP., Foreign Dist. Div., New York, N. Y.
Automobiles—43 ea.—$65,199

GENERAL MOTORS CORP., GMC Truck & Coach Div., E. Pontiac, Mich.
Tank spare parts—570 ea.—$230,519

GENERAL MOTORS CORP., United Motors Service Div., Detroit, Mich.
Kits—6000 ea.—$214,200

GOODYEAR TIRE & RUBBER CO., INC., Akron, Ohio
Wheel assys.—285 ea.—$34,394

GRAY MARINE MOTOR CO., Detroit, Michigan
Diesel engines—18 ea.—$13,546

"HH" MANUFACTURERS, Long Beach, Calif.
Trucks, platform, gasoline—67 ea.—$140,418

HOWE FIRE APPARATUS COMPANY, Anderson, Indiana
Body, truck, fire powered, pumper—9 ea.—$42,848

HUGHES AIRCRAFT CO., Culver City, Calif.
Control surface tie-in components—$2,340,000

KELSEY-HAYES WHEEL CO., Detroit, Michigan
Design, development wheels—job—$40,543

THE LEECE-NEVILLE COMPANY, Cleveland, Ohio
Starter assy.—63 ea.—$49,104

LIPE-ROLLWAY CORP., Syracuse, New York
Spare parts—1063 ea.—$46,628

THE MANSFIELD TIRE & RUBBER CO., Mansfield, Ohio
Tire—573 ea.—$35,841

MINNEAPOLIS-HONEYWELL REGULATOR CO., Aeronautical Div., Minneapolis, Minn.
Repair of components of automatic pilot systems—599 ea.—$133,071

MODINE MANUFACTURING COMPANY, Racine, Wisconsin
Radiator assy.—554—$47,495

MONROE AUTO EQUIPMENT CO., Monroe, Mich.
Tank spare parts—4590 ea.—$196,911

NORTH AMERICAN AVIATION, INC., Fresno, Calif.
Kit, for installation of extended leading edges—900 ea.—$1,569,422
Kit, GPA Components, for installation of advanced electronic system—900 ea.—$6,423,555

(*Turn to page* 462, *please*)

Another Example of

VICKERS®

HYDRAULICS

in Automation

Ex-Cell-O Precision Cylinder Boring Machines shown below are finish-boring V-8 engine blocks. Like so many other high-production machines, these make generous use of hydraulics.

In addition to the advantages inherent in hydraulic control, Vickers Hydraulics gives you the benefits of a nation-wide company-operated field engineering and service organization to assure correct application and operation with least maintenance. Vickers has the complete line of hydraulic equipment necessary to take undivided system responsibility . . . to eliminate any risk of incompatibility of hydraulic components.

The Vickers Application Engineer near you will be glad to demonstrate the many benefits you can obtain by using Vickers Hydraulics. Write for a copy of Catalog 5002B.

VICKERS INCORPORATED

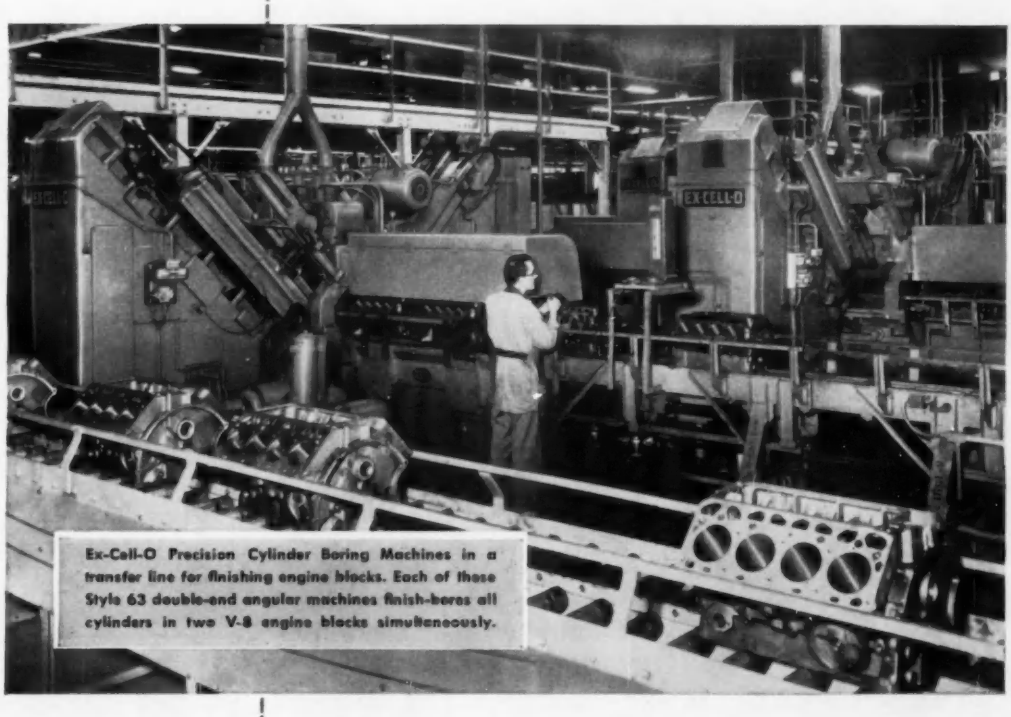
DIVISION OF SPERRY RAND CORPORATION

1428 OAKMAN BLVD. • DETROIT 32, MICH.

Application Engineering Offices: • ATLANTA • CHICAGO • CINCINNATI • CLEVELAND DETROIT • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N.J.) • PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) • PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS TULSA • WASHINGTON • WORCESTER

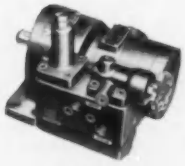
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

Engineers and Builders of Oil Hydraulic Equipment Since 1921



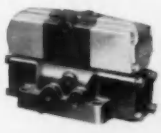
Ex-Cell-O Precision Cylinder Boring Machines in a transfer line for finishing engine blocks. Each of these Style 63 double-end angular machines finish-bores all cylinders in two V-8 engine blocks simultaneously.

Representative VICKERS Units Used on Ex-Cell-O Precision Cylinder Boring Machines



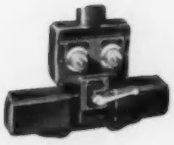
Two-Pressure Pump

Insures lower maintenance cost and saves horsepower and heat in two-pressure hydraulic circuit. Automatically provides high volume at low pressure and low volume at high pressure.



Solenoid Controlled Pilot Operated 4-Way Valve

Compact and versatile "sandwich" construction. Gasket mounting simplifies installation and overhaul . . . also minimizes piping.

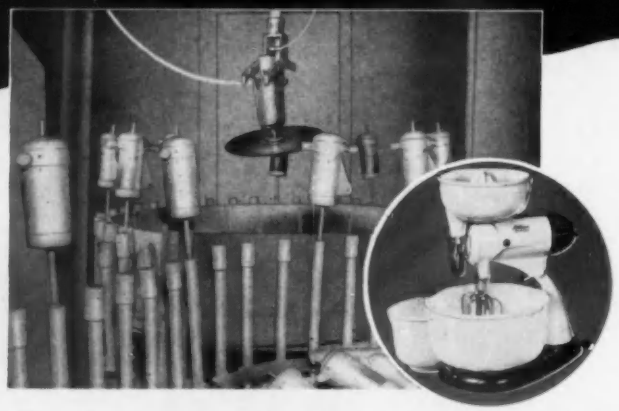


Traverse and Feed Cycle Control Panel

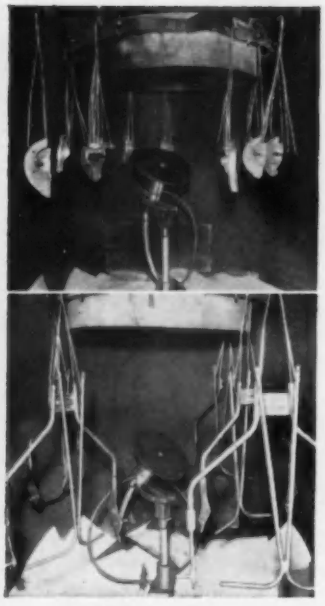
Maintains smooth and constant preset feed rate regardless of fluctuations in cutting tool resistance or hydraulic pressure.

7350

Sunbeam is particular about the uniform high quality finish on their products, so SUNBEAM relies on RANSBURG NO. 2 PROCESS Electrostatic Spray Painting



Along with improving the quality of the brilliant white finish on Mixmaster parts, an 80% paint savings was achieved when SUNBEAM switched from hand spray to RANSBURG Electrostatic Spray Painting



Protective clear lacquer is applied to upper saw guard (upper left) with RANSBURG NO. 2 PROCESS on this line in SUNBEAM's plant 2, Chicago. Other hardware items, including the Drillmaster and Sunbeam Sander are lacquer-coated electrostatically here. Lawn mower parts, such as the handles shown (lower left), the Rain King lawn sprinkler base, and the Sunbeam Fryer base also are painted efficiently with Ransburg No. 2 Process Electro-Spray.

Regardless of the type of product you manufacture, if it's painted—and if your production justifies conveyorized painting—you should look into the savings and improved quality which can be yours with one of the Ransburg Electrostatic Processes. May we tell you about complete Ransburg services, including the test painting of your products in our laboratories?

Write to Dept. A

Ransburg ELECTRO-COATING CORP.
Indianapolis 7, Indiana

RANSBURG

(*Continued from page 460*)

NORTH AMERICAN AVIATION, INC., Los Angeles, Calif.
Cockpit procedure trainers—$282,240
Long lead time items and materials for F-86F airplanes—$3,300,000

OAKLAND TOOL & MANUFACTURING CO., Birmingham, Mich.
Tank spare parts—1460 ea.—$40,719

PACIFIC AIRMOTIVE CORP., Burbank, California
Engine dolly and data—144 ea.—$167,-199

PACIFIC TIRE & RUBBER CO., Oakland, Calif.
Tires—2400 ea.—$382,060

REO MOTORS, INC., Lansing, Michigan
Auto spare parts—230 ea.—$101,437

ROSS GEAR AND TOOL CO., Lafayette, Indiana
Gear, steering—3849 ea.—$217,816

SEALED POWER CORP., Muskegon, Michigan
Auto parts—16,060 ea.—$58,344

SUNDSTRAND MACHINE TOOL CO., Rockford, Ill.
Transmission assemblies—140 ea.—$1,-359,173
Overhaul of transmission assembly—job—$51,047

TIMKEN ROLLER BEARING CO., Canton, Ohio
Bearings—9450 ea.—$39,455

TWIN DISC CLUTCH CO., Racine, Wisconsin
Repair parts for Diesel engines—20,322 ea.—$67,706

VICKERS, INC., Detroit, Mich.
Hydraulic pumps—32 ea.—$26,135

VICKERS, INC., Tulsa Winch Div., Tulsa, Okla.
Winch assy.—$101,663

WILLYS MOTORS, INC., Toledo, Ohio
Trucks—178 ea.—$329,096

THE YALE & TOWNE MFG. CO., Philadelphia, Pa.
Truck, fork lift, Diesel—8 ea.—$40,603

BOOKS . . .

ASME HANDBOOK: ENGINEERING TABLES, *edited by Jesse Huckert, published by McGraw-Hill Book Co., Inc., 327 West 41st St., New York 36, N. Y. Price, $12.00.* Sponsored by the Metals Engineering Handbook Board of the American Society of Mechanical Engineers, and one of four volumes comprising the ASME Handbook, this reference contains many tables of recognized design standards. Typical of those not commonly found are the table of involute functions, methods for finding loads on ball bearings, and information on bars and tubes suitable for reworking into gears, levers, shafts or screws. The 704-page book is arranged in 15 sections, grouping together tables which apply to the design of specific parts. It covers such subjects as bar stock and shafting; bearings; spur, helical, herringbone, bevel and worm gears; cylindrical fits; keys and keyseating; bolts; springs; aircraft and mechanical tubing; serrations and splines; electrical motors; and gaskets.



In Materials Handling

Follow The Leaders...

Use Automatic Electric Trucks

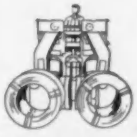
Carrying approximately 6100 pounds per load, a fleet of Automatic Electric Trucks like the two above work around the clock, 365 days a year, in the hammer shop of a leading automobile manufacturer. Your own requirements may not be equally severe but all Automatic Electric Trucks are engineered to give comparable service when needed.

They work, too, for pennies an hour—cost less per year to own and less to operate...last years longer with only negligible down time.

Experienced operators invariably favor Automatic Electric Trucks, too, for the smooth, fume-free ride with no gear shifting, safer low center of gravity, and smoother handling in tight quarters. In short, Automatics excel in every wanted lift truck quality.

There's a model, too, that's exactly suited for your requirements. You'll find it fully described in Automatic's new 16-page catalog of America's most complete line of electric-driven trucks. *Write for your copy today.*

Address: Automatic, 57 West 87th Street, Dept. C6, Chicago 20, Illinois



SKYLIFT GIANT With fork or ram, capacities to 100,000 lbs.



DOCKER—for congested areas: 1,000 to 3,000 lbs.



LOW PROFILE SKYLIFT—Safer in low-clearance areas: 1,000 to 4,000 lbs.



TRANSVEYOR—for narrowest aisles. 2,000 to 4,000 lbs.

50th Automatic Anniversary

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS

Development of a New Alloy from Research to Production

By E. C. BISHOP
Manager, Alloy Engineering
MATERIALS MANUFACTURING DEPARTMENT
Westinghouse Electric Corp.

ALTHOUGH considerable attention has been directed in recent years toward the development of better super alloys, and what might be called the "ultimate" alloys, most of this effort has been concentrated in research laboratories. Here an incredible number of alloy systems have been investigated, and the fundamental properties of the more promising systems have been developed.

Quite a bit is known about the high temperature properties of molybdenum and several of its alloys, as well as those of nickel, cobalt, and chromium. However, relatively little effort has gone into the commercial development of these ultra high temperature alloys. The lack of integrated metallurgical pilot plants has constituted one of the greatest deterrents to commercial exploitation of research developments.

The "scaling-up" of 10- and 20-lb laboratory heats to commercial-size melts of a few thousand pounds, as well as the subsequent fabrication and heat treatment of strip, bar, and forged products, constitutes a field of engineering ripe with challenging problems. The new Westinghouse Metals Pilot Plant at Blairsville, Pa., is designed to bridge the difficult stage of development between research and production on a wide variety of special alloys, of which the high temperature group represent an excellent example. The new plant has been built and tooled with special equipment.

Pilot Plant Facilities

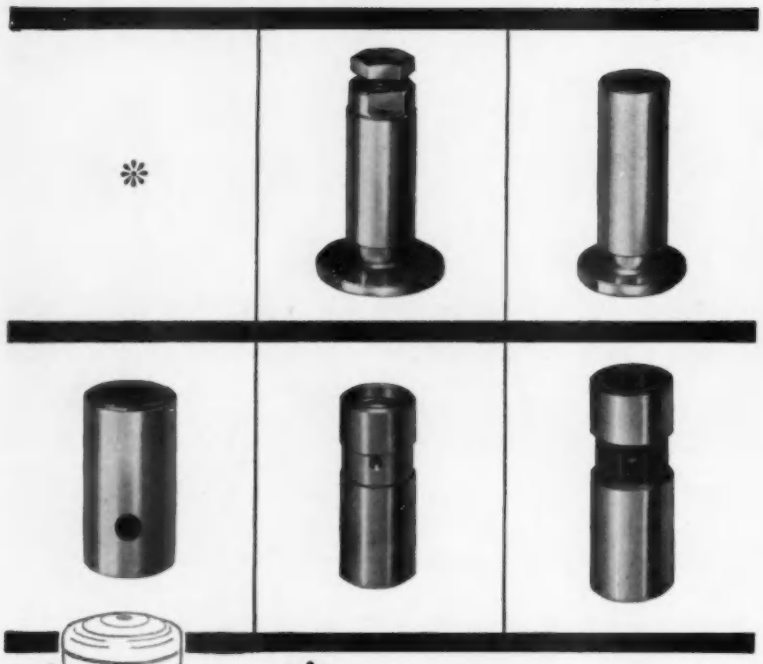
For wrought alloy products, melting can begin in heats ranging literally from 6 to 6000 lb in air induction melting equipment. Vacuum induction melting can be performed now in heats of 50 to 2000 lb, and eventually on a semi-continuous basis. Cold hearth melting or arc casting will be carried out on laboratory-size melts or 1000 lb heats. Hammers from 800 to 18,000 lb, both cogging and closed-die, as well as 300 to 1000 ton presses, can forge an almost unlimited variety of sizes and shapes. Conventional conditioning and pickling equipment provide adequate cleaning of all hot worked products.

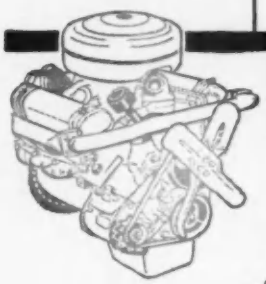
A reversing four-high, combination slabbing and strip mill can produce hot rolled plate or coiled strip up to 22 in. wide, while a variety of cold mills, slitters, grinders, levellers, and shears permit a broad range of cold finished strip products. Bars from four inches in diameter on down can be produced on a variety of bar mills, also included in the plant.

Any size or shape product that can be fabricated in the pilot plant can be given a wide range of heat treatments, including coiled or continuous-strip atmosphere annealing, vacuum annealing, and conventional solution treating and aging.

For cast products, flexible invest-

JOHNSON *tappets*





keep pace with today's engines

Continual experimentation and excellent manufacturing methods show a steady product improvement that make JOHNSON TAPPETS worthy of your consideration. Only proven materials, covering a range of steel, chilled iron, and various iron alloys are used in the manufacture of JOHNSON TAPPETS, providing greater strength, light weight and increased wear resistance. Serving the AUTOMOTIVE — AIRCRAFT — FARM — INDUSTRIAL — MARINE Industries.

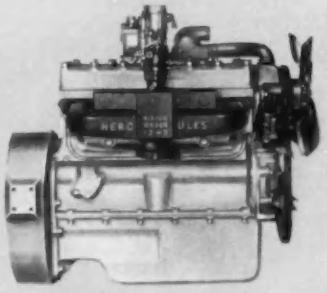
"tappets are our business"

JOHNSON JP PRODUCTS inc.
MUSKEGON, MICHIGAN

Now— HERCULES OFFERS...

All four types of engines from one dependable source

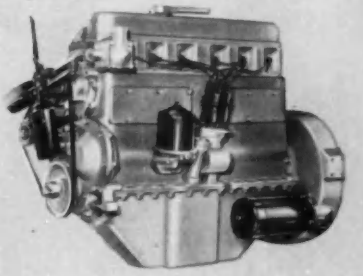
GASOLINE



L-HEAD

The famous Hercules L-head design is available in 36 models from 39 to 935 cu. in. displ. These compact engines have a reputation for long-life and dependable service.

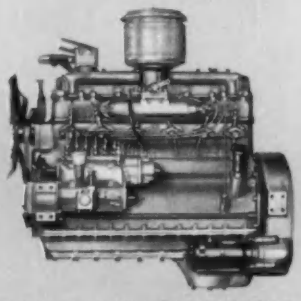
NEW



GO SERIES
Overhead Valve

These engines are available in 4 and 6 cylinder sizes from 173 to 339 cu. in. displ. The GO series is interchangeable with the new DD series, thus providing the option of gasoline or diesel power.

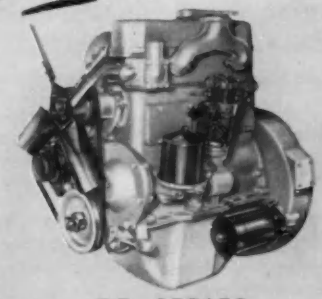
DIESEL



TURBULENCE CHAMBER

32 models of these high-speed heavy-duty diesel engines are available in 2, 4, 6 and 8 cylinder sizes from 83 to 1468 cu. in. displ. Many different versions are available.

NEW



DD SERIES
Direct Injection

In addition to having interchangeable mounting dimensions with the GO series, these engines have many interchangeable parts and accessories. For more details on any engine listed at right, contact the factory.

HERCULES MOTORS CORPORATION
Canton 2, Ohio

GASOLINE

2 CYLINDER		
BXB	2⅞" x 3"	39
NXA	3" x 4"	56.5
NXB	3¼" x 4"	66.3
4 CYLINDER		
ZXA	2½" x 3"	59
ZXB	2⅝" x 3"	65
IXA	3" x 4"	113
IXB	3¼" x 4"	133
IXLB	3¼" x 4¼"	141
JX4E	3½" x 4¼"	164
G.O. 173	3½" x 4½"	173
JX4C	3¾" x 4¼"	188
G.O. 198	3¾" x 4½"	198
JX4D	4" x 4¼"	214
G.O. 226	4" x 4½"	226
6 CYLINDER		
QXA	3⅛" x 4⅛"	190
QXB	3¼" x 4⅛"	205
QXC	3⅜" x 4⅛"	221
QXD	3-7/16" x 4⅛"	230
QXLD	3-7/16" x 4¼"	236.7
JXE	3½" x 4¼"	245
JXB	3⅝" x 4¼"	263
G.O. 260	3¼" x 4½"	260
JXC	3¾" x 4¼"	282
G.O. 298	3¾" x 4½"	298
JXD	4" x 4¼"	320
G.O. 339	4" x 4½"	339
JXLD	4" x 4½"	339
WXC-3	4¼" x 4½"	383
WXLC	4" x 4¾"	358
WXLC-3	4¼" x 4¾"	404
TDXB	4⅜" x 5¼"	474
TDXC	4½" x 5¼"	501
RXB	4½" x 5¼"	501
RXC	4⅝" x 5¼"	529
RXLC	4⅝" x 5¼"	529
RXLD	4¾" x 5¼"	558
RXLDH	4¾" x 5¼"	558
HXB	5" x 6"	707
HXC	5¼" x 6"	779
HXD	5½" x 6"	855
HXE	5¾" x 6"	935
‡HXE	5¾" x 6"	935

‡Dual Carburetion

DIESEL

2 CYLINDER		
DIX-83	3⅝"x4"	83
DIXC	4"x4½"	113.1
DIXD	4¼"x4½"	127.5
4 CYLINDER		
DIX4B	3¼"x4"	133
DIX4D	3⅝"x4"	166
D.D. 173	3½"x4½"	173
DOOB	3¾"x4½"	198.8
D.D. 198	3¾"x4½"	198
DOOC	4"x4½"	226.2
D.D. 226	4"x4½"	226
DOOD	4¼"x4½"	255
6 CYLINDER		
DIX6D	3⅝"x4"	248
DIX6-272	3¹¹⁄₁₆"x4¼"	272
DJXB	3½"x4½"	260
D.D. 260	3½"x4½"	260
DJXC	3¾"x4½"	298
D.D. 298	3¾"x4½"	298
DJXH	3¾"x4½"	298
D.D. 339	4"x4½"	339
DJXHF	3¾"x4½"	298
DWXC	4"x4¾"	358
DWXD	4¼"x4¾"	404
DWXLD	4¼"x5"	426
DWXLDF	4¼"x5"	426
DRXB	4⅜"x5¼"	474
DRX-501	4½"x5¼"	501
DRXC	4⅝"x5¼"	529
DFXB	5"x6"	707
DFXC	5¼"x6"	779
DFXD	5½"x6"	855
DFXE	5⅝"x6"	895
DFXE-TS	5⅝"x6"	895
DFXH	5¾"x6"	935
DFXHF	5¾"x6"	935
8 CYLINDER		
DNX-V8C	6"x6"	1348
DNX-V8D	6¼"x6"	1468
DNX-V8DTS	6¼"x6"	1468

THOMSON

NYLINED*

BEARINGS



...with Smooth, Tough, DuPont NYLON!

...OFFER YOU THESE IMPORTANT BENEFITS

- LOWER COST
- NO LUBRICATION
- MINIMUM SPACE
- CLOSE FIT
- RESIST POUNDOUT
- RESIST ABRASION
- RESIST CORROSION
- EASILY INSTALLED
- DAMP VIBRATION
- OPERATE IN LIQUIDS
- NO FRICTION OXIDATION
- LOW FRICTION
- SILENT
- LIGHTEST WEIGHT
- NON-CONTAMINATING
- LESS MAINTENANCE
- SELF-RETAINING
- INSTANTLY REPLACEABLE
- LONGER LIFE

Engineered to Solve Problems... Improve Products... Reduce Costs!

NYLINED Bearings are a highly engineered thin liner of Dupont Nylon, designed to bring bearing users the many benefits of Nylon as a bearing material by solving most of the limitations surrounding its use. The compensation gap principle assures maintenance of diametral tolerances for precision applications.

Available in 4 standard types, 10 standard sizes... from stock. Other types and sizes may be inexpensively tooled for production applications. For catalog containing data on advantages, applications, standard sizes, prices, special types, load ratings, engineering information, evaluation chart, installation methods ...write to

*REG U. S. PAT. OFF.



THOMSON INDUSTRIES, Inc.

DEPT. 1, MANHASSET, NEW YORK

Also— —Manufacturers of BALL BUSHINGS... the Ball Bearing for Linear Motions

ment casting and shell molding lines permit thorough investigation of the application of these processes in any new alloy development. A complete powder metallurgy pilot plant rounds out the processing equipment group.

Thorough inspection and rigid testing is assured by a well tooled quality control laboratory, which includes hardness, tensile, creep, ultrasonic, zyglo, and X-ray testing equipment as well as metallographic and direct-reading spectrographic facilities.

Typical Alloy Development

To trace a typical alloy development, start at the Westinghouse Research Laboratories, where a hypothetical metal "Zooperaloy" has been spawned. Preliminary tests indicate the new metal will have excellent creep and hot tensile properties at 2500 F. The approximate composition has been established, consisting of at least half a dozen major elements, some of which are quite reactive at their melting point. Although extremely refractory, "Zooperaloy" has been hot worked in sizes up to 20 lb laboratory, arc-cast ingots. Pilot plant engineers must determine:

1. What composition limits can be economically held in large heats?
2. Can reasonably sound ingots of considerably larger size be cast?
3. In scaling up the ingot size, has excessive segregation made properties unreliable?
4. Under what conditions, if any, can these larger ingots be forged, without excessive cracking?
5. Must the composition be compressed to promote commercial forgeability?
6. What are the practical temperatures and reductions for various hot working operations?
7. Can "Zooperaloy" be cold worked, must it be warm worked, and under what conditions?
8. By statistical analyses of a large enough number of heats, what composition limits must be held to yield a narrow enough band of properties for successful commercial application?
9. Will the customer be able to fabricate the alloy into the products he desires?

(*Turn to page 470, please*)



MURRAY-WAY the automatic way
the economical way
the better way

to POLISH . . . BUFF . . . GRIND . . . FILTER

Whatever your job . . . whatever your problem . . . Murray-Way automatic equipment will do that job better and more economically.

These are just a few illustrations of Murray-Way's success in beating production cost with the finest automatic equipment available.

You can depend on Murray-Way engineering, Murray-Way experience, Murray-Way equipment to solve your production problems.

A. Micro-Polish—Continuous Strip Polishing Installation
B. Vertical-Platen Conveyor
C. Horizontal-Platen Conveyor
D. #51 Universal Polishing Head —One of Several Standard Polishing Heads
E. The Automatic, Self-Cleaning, Compact Filter
F. #72 Series Belt Polishing Head
G. Indexing Dial Table
H. Six Micro-Polish Units in Series

P. O. Box 180, Maple Road, E.
Birmingham, Michigan

MURRAY WAY CORPORATION

SPICER ENDS

Spicer *Thornton POWR-LOK* Keeps Power



SPICER THORNTON POWR-LOK CONTROLS "WILD WHEELS" ON SNOW, ICE, MUD



SPICER THORNTON POWR-LOK CONTROLS "WILD WHEELS" ON ROUGH, BUMPY ROADS

DANA CORPORATION · TOLEDO 1, OHIO

"WILD WHEELS!"

Geared to BOTH Driving Wheels!

THE Thornton POWR-LOK principle is another in the ever-growing list of safety- and power-transmission innovations developed by Dana engineers and Dana resources. It is a new concept of controlled driving-wheel power . . . the most revolutionary rear axle design in volume production since the invention of the differential itself!

The Thornton POWR-LOK Differential in Spicer Axles now makes possible the automatic delivery of controlled torque to BOTH driving wheels under all tractive conditions, and ends "wild wheels" often occurring in ordinary axles.

No more "wild wheels" that spin uselessly in mud, ice, sand or snow. The Thornton POWR-LOK Differential enables the wheel with the *better* traction to apply the *major* driving force to the road, thereby enabling the vehicle to move.

No more "wild wheels" that spin at high speed when bounced into the air by bumps or holes and then come down with sudden stoppage, causing dangerous car swerve or destructive tire scuffing.

The Spicer Thornton POWR-LOK keeps delivering safe, controlled torque to BOTH wheels at all times, adjusting itself instantly to varying road conditions, and assuring steady propelling action to the vehicle.

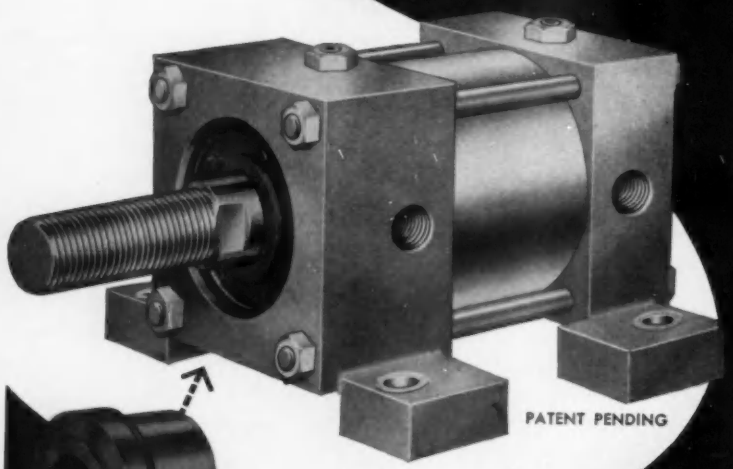


Write for brochure illustrating and describing the efficiency and safety aspects of the new Thornton POWR-LOK Differential as now offered exclusively in Spicer Axles. Available for passenger cars, and light and medium-duty commercial vehicles.

Spicer

SPICER PRODUCTS: TRANSMISSIONS • UNIVERSAL JOINTS • PROPELLER SHAFTS • AXLES • TORQUE CONVERTERS • GEAR BOXES • POWER TAKE-OFFS
POWER TAKE-OFF JOINTS • RAIL CAR DRIVES • RAILWAY GENERATOR DRIVES • STAMPINGS • SPICER and AUBURN CLUTCHES • PARISH FRAMES • SPICER FRAMES

*APPROVED
HEAVY-DUTY
AIR CYLINDERS
for
Automation



QUICK-CHANGE
PACKING CARTRIDGE
Cuts Downtime

Step up production with rugged, service-free, S-P Heavy-Duty Air Cylinders:

- Designed for 200 PSI
- Rolled steel end plates
- Extra long cushions
- Extra large, hardened piston rod
- Minimum mounting and envelope dimensions
- 5 types of mountings
- 8 bore sizes, 1½" to 6"
- Double porting
- Interchangeable check and cushion valves
- Quick-change packing and bearing cartridge

* S-P Automation Cylinders were designed expressly for a large automobile manufacturer. They are thoroughly proven for automation and general heavy-duty applications. Prompt deliveries. Send for Catalog 109. For S-P standard Air Cylinders, request Catalog 102. The S-P Manufacturing Corp., 12415 Euclid Ave., Cleveland 6, Ohio.

THE S-P MFG. CORP. — Cleveland
A Bassett Company
PRECISION PRODUCTS SINCE 1916
AIR AND HYDRAULIC CYLINDERS • POWER CHUCKS • ROTATING AIR CYLINDERS
COLLET AND DRILL PRESS CHUCKS • AIR PISTONS, VALVES AND ACCESSORIES

Development of a New Alloy

(*Continued from page 466*)

10. What are the reproduceable physical, thermal, oxidation, and corrosion properties of the fabricated product?

Pilot plant engineers begin by collecting and reviewing all data established on "Zooperaloy" by the Research Laboratories. The first experimental step consists of arc casting a 500 lb ingot, which is then sectioned and etched to reveal its structure, and spot analyzed at various points to check for gross segregation.

It is found that the ingot is not sufficiently sound for forging and some segregation exists. By variation of melting and solidification rates, and minor composition changes in the next few heats, an apparently satisfactory ingot is obtained.

However, when attempts are made to forge it, neither variation of temperature, recrystallizing anneals, hammer or press forging, flat or V dies, nor any other variable can prevent complete cracking up on the die. Metallographic examination reveals no deleterious grain boundary condition and chemical analysis leads down a blind alley. However, careful spectrographic and X-ray diffraction analysis of grain boundary areas near a crack shows the presence of a minor impurity which is suspected of leading to a brittle grain boundary condition. This did not affect the small research heats, since solidification in them was so rapid that the element did not segregate at grain boundaries. Analysis of the raw materials shows that one contributes most of the impurity. Although a purer grade of the metal cannot be obtained, it is found that by vacuum melting, most of the impurity can be vaporized.

Starting with the purified raw material, a new heat is made, which, when V-die forged in a narrow temperature range with light reductions between recrystallizing anneals, can be worked. Fabrication beyond this point into bar stock, strip, and upset forged discs proceeds with minor set backs. Due to its refractory nature, frequent reheats during hot rolling are necessary and only the oversized housings and rolls of the mills permit reasonable control of dimensions.

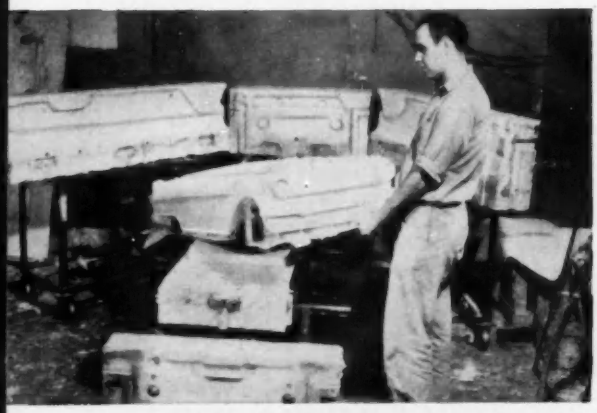
It is also discovered that "Zooperaloy," in more massive sections, has

Small-scale sample shows big possibilities in plastic tools



REINFORCED PLASTIC BODY on the "Junior Star Chief" was produced from Rezolin "Toolplastik" compounds, based on BAKELITE Brand Epoxy Resins. The child-sized scaled-down replica of the 1956 Pontiac convertible is used for dealer promotions.

Visit Bakelite Company's Exhibit, Booth #397, at A.S.T.E. Show, Chicago, March 19-23.



FIVE MOLD SECTIONS, shown here with cast body shell, will be clamped together to form complete body mold. These sections and the master model from which they are cast are made of compounds of BAKELITE Epoxy Resins. Dimensional stability of these materials prevents changes in size and shape. Their ability to harden at room temperature without shrinking speeds reduplication. "Toolplastik" compounds used are based on BAKELITE Epoxy Resins and are produced by **Rezolin, Inc.,** Los Angeles 45, Calif.

Where model changes are fast and frequent, metal and plastic products alike can benefit from the advantages of plastic tooling. Liquid compounds based on BAKELITE Brand Epoxy Resins can be cast into shape without pressure, cured at room temperature. Their minimum shrinkage means minimum finishing. Dimensional stability is outstanding; flexural, impact, and compressive strengths, excellent. Light weight makes plastic tools easy to handle. Examples: jigs, spotting racks, and Keller models made from glass cloth—Rezolin "Toolplastik" compounds.

For metal-working...

BAKELITE
BRAND
EPOXY RESINS

BAKELITE COMPANY, *A Division of Union Carbide and Carbon Corporation* UCC 30 East 42nd Street, New York 17, N.Y.
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC

some tendency to undergo an ordering transformation which results in low ductility at room temperature. Hence, in order to cold work the alloy, it must be warm rolled or fast cooled from the hot working range to suppress the formation of the ordered phase.

After heat treatment, the creep properties in bar stock are found to be somewhat inferior to those established in the laboratory, while, as might be expected, the properties of forgings are considerably less promising. More disturbing, however, is the fact that despite rigid control of all processing, consecutive heats show considerable variations in creep ductility, although not in tensile properties. Every possible variable in the process is scrutinized, melting practice, forging technique, rolling conditions, and temperature uniformity in heat treatment, to no avail. Statistical analyses of every conceivable variable result in "no correlation."

Since creep is known to be influenced markedly by grain boundary conditions, a careful program of spectrographic analysis is initiated, which requires the development of a new technique to pick up minor impurities existing in minute quantities. Eventually it is found that another impurity is present in appreciably higher quantities in the low ductility heats than in those of satisfactory elongation. Moreover, it is also established that this impurity cannot be removed from its raw material source by vacuum melting. However, zone refining the raw material will remove the impurity, and equipment is set up to perform this operation on a large scale.

Not only does erratic creep ductility disappear when this refinement is incorporated, but the general level of elongation is raised until it is close, but not equal, to the properties obtained in laboratory heats. The remaining discrepancy is expected for a number of reasons, such as the general mass effect and the existence of some segregation present in the large, but not the small, heats.

Although a satisfactory product is basically achieved, much additional time is spent in collecting data on a larger number of heats to determine statistically the variation of many properties of "Zooperaloy," in addition to its creep and tensile characteristics, such as its thermal, corrosion, and oxidation characteristics. Moreover, while determining the variables affecting the final properties, the information gained must be rapidly tied down with process specifications covering all the steps of manufacture, to insure consistent results for the future, despite poor memories, changes in personnel, and the insidious poison of inadvertent short cuts.

Probably more important than any other factor in the development of a research discovery to a commercial product is speed. Almost any experimental facility of haphazard design and direction can eventually achieve its goal—after competition has passed it. With the integrated equipment of the Blairsville plant, and guided by the engineering philosophy of "get there first," the problems of pilot plant production of new alloys will be most vigorously attacked.



HANSEN Series 3-RL
RING-LOCK COUPLING

Smaller—lighter—compactly designed, the Hansen Series 3-RL Coupling *effectively* handles far more volume than any coupling of equal dimensions. On any job requiring ¾" to ⅛" connections—from the air line to the air tool—this single size Hansen Ring-Lock Coupling—with completely interchangeable Sockets and Plugs—does it all—makes it easy to keep stock of parts in balance—holds inventories to a minimum.

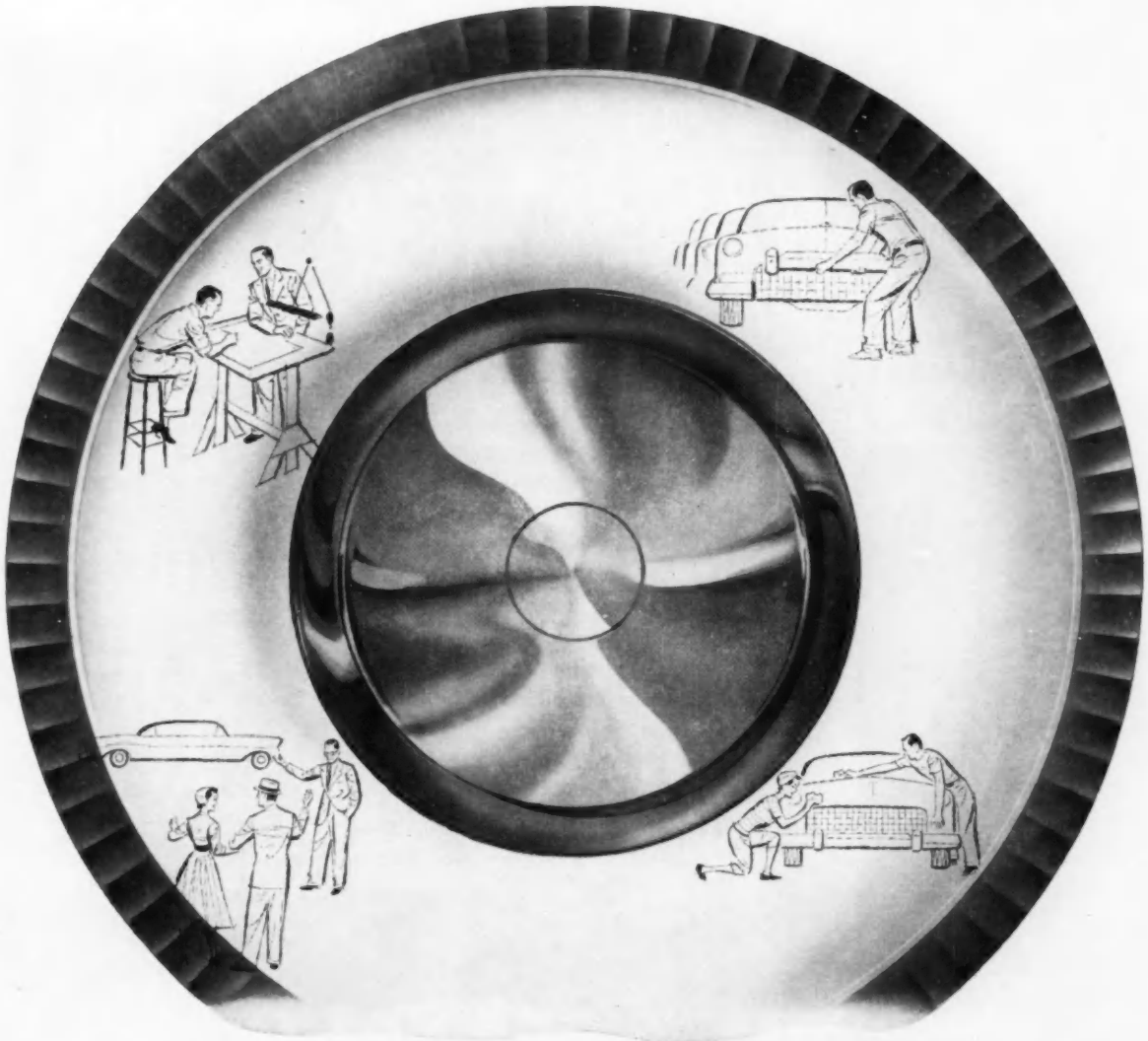
To connect, merely push Plug into Socket. To disconnect just turn the sleeve. Locking ring provides positive lock and assures tight fit. Sockets with aluminum bodies are available for use with small hand-operated air tools.



Write for Descriptive Literature

SINCE 1915 QUICK CONNECTIVE FLUID LINE COUPLINGS
THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

AUTOMOTIVE INDUSTRIES . . .
is your News Magazine of Automotive and Aviation
MANUFACTURING



IN THE PLANT...SHOWROOM...DRIVEWAY

everybody goes for STAINLESS STEEL!

Stainless steel means many things to many people!

To you in the industry, its exceptional versatility means almost limitless freedom. With one metal, *designers and engineers* work with beauty (set off by a wide variety of finishes), fabricating ease, remarkable structural strength, and great resistance to all weather conditions.

In production, stainless eliminates many production steps — plating or other treating operations.

To your salesmen, it's a feature they can stress. Its beauty, permanence, cleanability are helpful selling aids.

And to everybody, new and used car buyers alike, it's that series of parts that never age . . . never pit, flake or lose their sparkle. In the driveway, it makes a car a showpiece.

Why not let the Crucible engineer help you apply stainless steel profitably? *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor — Railway & Power Engineering Corp., Ltd.

Protect your workers

CUT YOUR GLOVE COSTS with Jomac Hand Guards



Here's rugged, common-sense protection for your workers, real economy for you. Jomac Hand Guards armor bare hands, stretch glove life when worn over gloves. Widely used in the automotive field, they're practical in scores of industries—for handling raw materials, parts, finished goods, castings, forgings, sheet steel and sheet metal assemblies. Interchangeable—can be worn on either hand—are made of durable, springy 32 oz. Jomac Cloth. They offer clear-cut *proof that quality means economy.*

Style H-180 Style H-150



Jomac manufactures all types of hand and forearm protection—all made from famous loop-pile Jomac Cloth.

JOMAC

INDUSTRIAL WORK GLOVES

PLANTS IN PHILADELPHIA, PA., AND WARSAW, IND.
IN CANADA: SAFETY SUPPLY COMPANY, TORONTO

• SEND COUPON FOR NEW JOMAC GLOVE CATALOG



JOMAC INC. Philadelphia 38, Pa., Dept. H

☐ Yes! Send me your latest Jomac Industrial Work Gloves Catalog.

Name.....

Company.....

Address.....

City.....State.....

SHORTIES

There is enough potential energy in a pound of uranium to fly an airplane around the world nonstop a hundred times or more.

•

By the year 1965, the U. S. population will probably total around 190 million persons. Spendable income of the populace in that year will probably be about $380 billion.

•

Tire cord is the largest industrial consumer of man-made fibers and the second largest consumer of all fibers.

•

An average force of 8000 lb would be exerted on the body of a 175-lb man enduring deceleration from 60 mph to a stop in less than three ft.

•

In 1925, the average life of a car was about seven years and/or 25,000 miles. The modern car is good for a total of 125,000 miles of service.

•

The combined horsepower of all registered vehicles in the U. S. in 1955 totaled about seven billion horsepower, or about 50 hp per person.

•

The average motorist today drives about 10,000 miles each year, using about 700 gallons of gasoline.

•

Motor vehicle registrations and travel mileage on the nation's highways are due to increase more than 33 per cent by 1965.

•

Inadequate roads today are costing U. S. motorists more than $5 billion a year.

•

Floor space used in production of one of the latest air transports by one U. S. aircraft company would accommodate 20 battleships, 69 submarines, and 24 PT boats.

Match the good reputation of your trucks with the AIR BRAKES your best customers prefer—BENDIX-WESTINGHOUSE!





MR. J. A. RYDER
President, Great Southern Trucking Company

Mr. Ryder, a veteran fleet operator with over 20 years' experience in the trucking business, directs his company's vast resources from executive headquarters in Jacksonville, Florida. Maintaining 62 modern terminals and call stations, employing 2000 people and operating 1500 pieces of mobile equipment, Great Southern, in 1954, ranked as the largest motor carrier operating within the six southeastern states of Florida, Georgia, South Carolina, North Carolina, Alabama and Tennessee. Mr. Ryder states . . .

"In our 20 years in business

We've bought 2,360 trucks

AND WHEN IT COMES TO AIR BRAKES, WE PREFER

Bendix-Westinghouse!"

THE WORLD'S MOST TRIED AND TRUSTED AIR-BRAKES





MR. FRANK G. CAMPBELL
President, Campbell Sixty-Six Express, Inc.

From general headquarters in Springfield, Missouri, Mr. Campbell, since 1926, has directed the activities of this pioneer motor carrier in providing shippers with fast, dependable service from the Great Lakes to the Gulf of Mexico. Serving the nine states of Missouri, Illinois, Kansas, Oklahoma, Arkansas, Tennessee, Mississippi, Alabama and Louisiana, the vast Campbell Sixty-Six fleet rolls up mileage equivalent to twice around the world each day! Mr. Campbell says . . .

"In our 28 years of business

We've bought 1,000 trucks

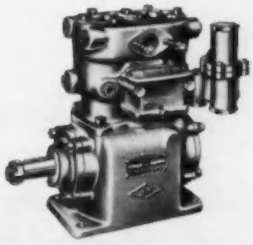
AND WHEN IT COMES TO AIR BRAKES, WE PREFER

Bendix-Westinghouse!"

THE WORLD'S MOST TRIED AND TRUSTED AIR BRAKES

It is a rarity, indeed, when a product in any field demonstrates customer preference so strong that it continually *outsells all other competition combined* year after year. Yet, for the past twenty-five years this has been the remarkable accomplishment of Bendix-Westinghouse Air Brakes in the truck and bus fields! In fact, recognition of the greater safety, economy and dependability of Bendix-Westinghouse Air Brakes by truck buyers has resulted in their factory installation on more and more truck models of all sizes.

Chances are good that your trucks, too, offer the many advantages of these powerful brakes. If not, we suggest you take advantage of the proven preference and superiority of Bendix-Westinghouse Air Brakes by offering them as factory-installed equipment. It's one sure and easy way to add more sales appeal to your vehicles!



Over 1,500,000 compressors produced over a twenty-five-year span stand behind the TU-FLO 400. Many advanced features guarantee performance no other compressor can equal.

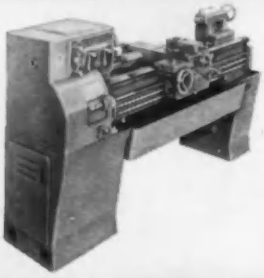
Bendix-Westinghouse BENDIX-WESTINGHOUSE AIR BRAKES REG. U.S. PAT. OFF. **AIR BRAKES**

BENDIX-WESTINGHOUSE AUTOMOTIVE AIR BRAKE COMPANY • General offices and factory—Elyria, Ohio. Branches—Berkeley, Calif. and Oklahoma City, Okla.

The Right Lathe for You from LeBlond's Complete Line...

Regal Lathes

Dependable Performance at Low Cost



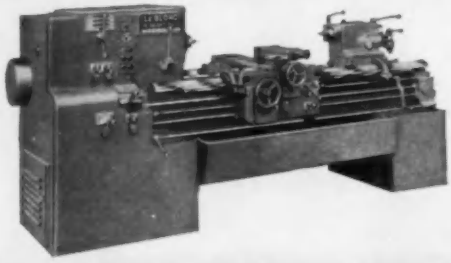
13", 15", 17", 19", 21", 24"; 2 to 5 horsepower

Designed and built like heavy-duty lathes, the new LeBlond Regals will give you a long life of precision production, minimum maintenance and the kind of dependability you'd expect from a much higher-priced machine!

Major features: Hardened and ground replaceable steel bed ways. Combination gear-belt drive headstock. *Both* feed rod and leadscrew. 3-bearing spindle. Advanced styling. Plus general construction details patterned after LeBlond heavy-duty lathes.

Small Heavy Duty Lathes

Stamina Plus with Precision



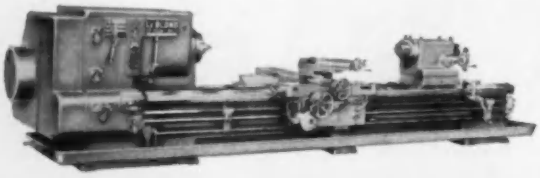
12", 14", 16", 20"; 7½ to 20 horsepower

LeBlond heavy-duty engine lathes have always been known for their outstanding stamina—the ability to stand up to the toughest turning jobs with precision, year after year. Our new machines in this class are the most rugged, yet precise that we've ever built!

Major features, 16" machine shown: Single-lever, four-way power rapid traverse built into the one-piece apron. Combination gear-belt drive headstock with 27 speeds from 16 to 2000 rpm. Totally-enclosed quick-change box. Hardened and ground replaceable steel bed ways. Automatic lubrication.

Large Heavy Duty Lathes

Heavy Hogging or Fine Finishing with Ease



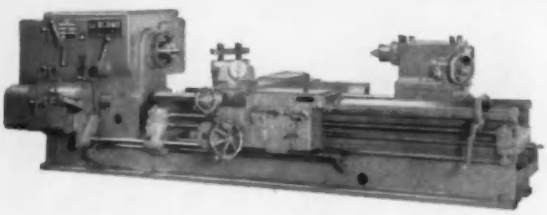
25", 32", 40", 50"; 50 and 60 horsepower

When large-swing work is in your production picture, check these big LeBlonds. Whether you need real high power, contoured shapes or fine finish, LeBlond offers the utmost in dependability, speed and easy operation.

Major features, 32" machine shown: Adjustable acceleration for starting, stopping, jogging provides true safety. 36-speed headstock, spur gear design for the lowest no-load friction horsepower. Four-way power rapid traverse (six-way on 40s or 50s). Generous proportions throughout for long-lived stamina and precision!

Sliding Bed Gap Lathes

Maximum Versatility with Dependability



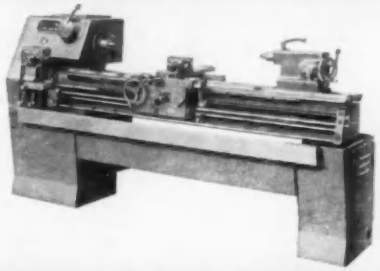
16"/38", 25"/50", 32"/60" Heavy Duties; 17"/28" Regal

Lathe department all rolled up in one machine! In addition to regular turning, facing, chasing, tracing, you can handle odd-shaped or large-diameter work as well as extra-long pieces.

Major features, 25"/50" machine shown: Sliding upper bed moves easily to provide variable gap or capacity for extra length. 36-speed high-power headstock. Special one-piece apron with extended length handwheel brings cutting tool close to gap. Four-way power rapid traverse.

Dual Drive Lathes

Best Buy for Medium-duty Turning



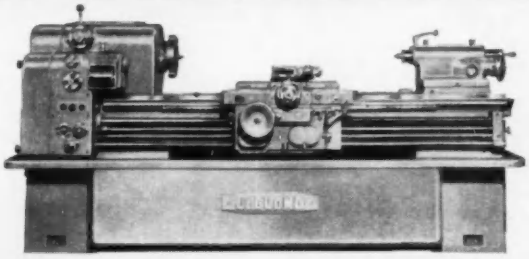
15"; 5 horsepower

Dual Drive gives you efficient capacity for the great proportion of your lathe work. Smooth and powerful spindle speeds satisfy all requirements up to those requiring a heavy-duty machine. Precision production at moderate cost!

Major features: Single-lever choice of 16 spindle speeds from 31 to 2400 rpm through combination gear-belt drive headstock. Hardened and ground replaceable steel bed ways. Totally-enclosed quick-change box. Automatic lubrication. Double-wall, one-piece apron.

Model RT Toolroom Lathes

The Ultimate in Precision, Convenience, Versatility



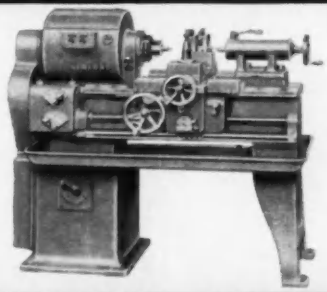
16"; 7½ horsepower

Even today, other lathes can't match the advanced designs pioneered by LeBlond in the RT Toolroom Lathe. When it comes to producing a wide variety of fine toolroom work, no other lathe can match the convenience, precision and speed of the RT.

Major features: Infinitely-variable spindle speeds from 6 to 1500 rpm by a single lever. Universal quick-change box provides 90 feeds and threads. Four-way power rapid traverse. Combined feed apron cuts steep tapers. Automatic chasing stop limits cross slide travel, saves time in chasing threads.

Rapid Production Lathes

Best for Low-cost High Production



13", 17", 21"; 3 to 10 horsepower

Not a stripped down engine lathe, RP is designed to give you high production for a variety of work within a range you choose. A great number of productive attachments are available to suit your special needs.

Major features, 13" machine shown: Choose from three headstocks that give you speeds as low as 68 rpm and as high as 3600 rpm. Hardened and ground replaceable steel bed ways. Automatic lubrication to headstock and feed box. Heavy-duty carriage and apron.

LeBLOND also Builds:

Plain Bed Gap Lathes.....12", 14", 16", 20", 25", 32"

Hollow Spindle Lathes.....16", 20", 27", 30"

Toolroom Lathes.....12", 14", 16", 20"

Standard Duty Lathes.....20", 25", 32", 40"

Crankshaft Lathes.....Automatic—for any crank

Cutter Grinder

Hydra-Trace*
Duplicating Attachment...Fits most LeBlonds built since 1935
*Trade Mark Reg. U. S. Pat. Off.

LeBLOND of Cincinnati

Write for complete catalog C-56N

The R. K. LeBlond Machine Tool Company *Cincinnati 8, Ohio*

World's largest builder of a complete line of lathes for more than 69 years

Representatives in principal cities throughout the world

KEEPS "Monkey-Wrenches" OUT OF GEARS!

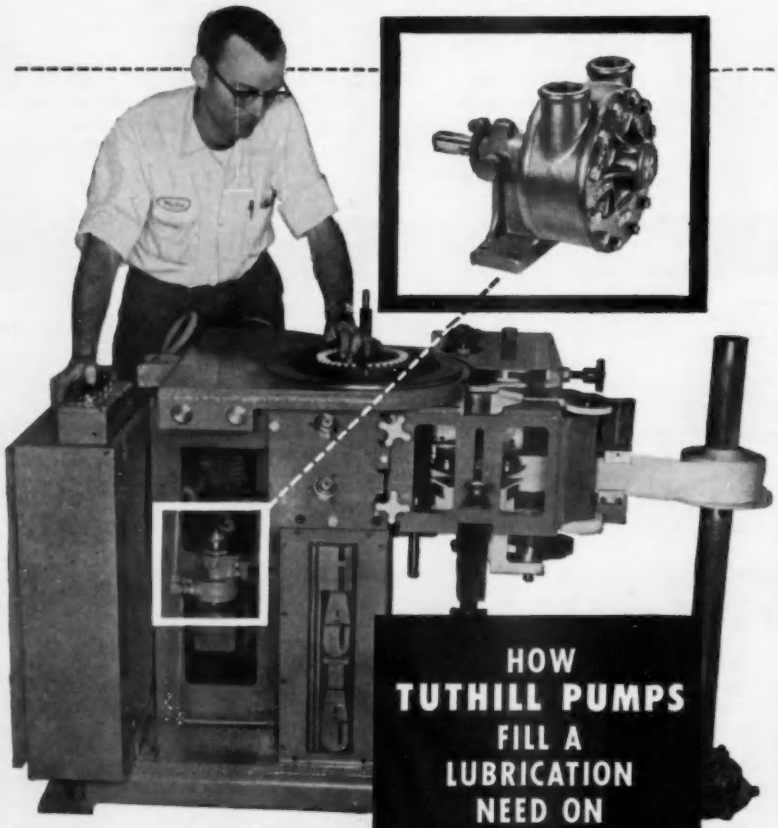


Photo of Automatic Stator Insulation Machine, courtesy Hautau Engineering Company, Ferndale, Michigan

HOW TUTHILL PUMPS FILL A LUBRICATION NEED ON MACHINES FOR AUTOMATION

In developing this machine that automatically forms and inserts insulation for the stators of electric motors, Hautau engineers required a dependable pump for lubricating the various operating gears and indexing mechanism. For this vital service they selected the Tuthill Model C internal-gear rotary pump.

The performance characteristics of this positive displacement pump make it ideal for pressure lubrication. It holds its prime. Instantly delivers the capacity needed. Operates quietly. And it is built for long, uninterrupted service. Tuthill specializes in building pumps for the purpose. Whether your production calls for standard pumping units or special pumps for engineered applications in lubrication, coolant, hydraulic or liquid transfer service, it will pay you to submit your specifications for recommendations.

Write today for complete data on Tuthill Pumps for lubrication or other specific service.

TUTHILL PUMP COMPANY
Dependable Rotary Pumps . . . since 1927
939 East 95th Street, Chicago 19, Illinois

Canadian Affiliate: Ingersoll Machine & Tool Co., Ltd.
Ingersoll, Ontario, Canada



General Services Administration states that Government has given up 49,000 vehicles in the past two fiscal years. GSA computes the savings from this action as more than $20 million annually, but it adds that less than 12 per cent of the fleet is replaced each year.

Government has reduced its demands for primary aluminum output in order to ease the squeeze on industrial users. Office of Defense Mobilization states that Government call for 25,000 tons by April 30, 1956, is being cut.

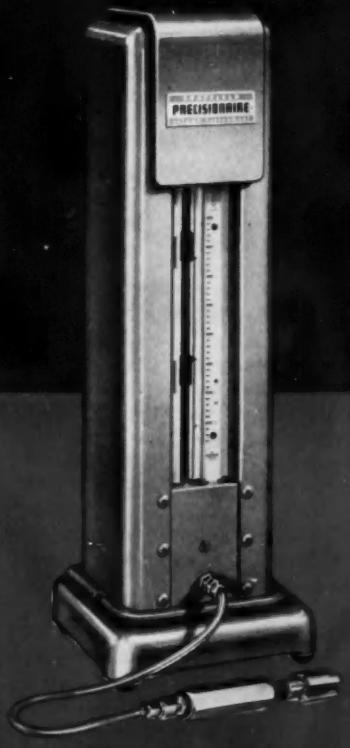
Air Force strategists are lining up their supply plans on the premise that the atomic war of the future will be decided in the first 60 to 90 days (or less) of air action. Their ideas on stocking materials, particularly semi-finished components of planes, missiles, and conventional weapons are being reworked accordingly.

Government savings of $291 million a year will result eventually from the 16 per cent of the Hoover Commission proposals thus far adopted, the Citizens Committee for the Hoover Report estimates.

Russia is stepping up purchases of American-made farm machinery. In the last two months, Commerce Dept. figures show orders for $1.5 million worth of farm machinery and equipment.

Commerce Dept. is making available to business concerns an index classifying some 250 foreign trade reports by area and by subject for the last six months of 1955. It is available for 10¢ from the Superintendent of Documents, Washington 25, D. C.

FREE DEMONSTRATION



SHEFFIELD Adjustable AIR GAGES

for Short Runs and Emergencies

SUCH AS:

- Aircraft manufacturers, subcontractors and job shops having limited production.
- Accidental damage to a vitally needed single purpose gage.
- An unexpected engineering change involving part size.
- A short run of special parts for which no gages have been provided.
- A mistake or failure in ordering the needed single purpose gages.
- Sudden need for process gages at the production machines.

Don't let any of these situations cause costly scrap, delays or embarrassing confusion in inspection, in the shop or in the toolroom. A small investment in the adjustable air gages here illustrated is your best insurance against unpredictable production losses. *The Sheffield Corporation, Div. #600, Dayton 1, Ohio, U.S.A.*



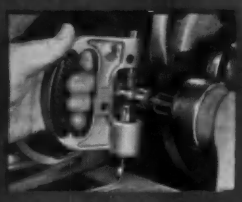
ADJUSTABLE BALLJET SPINDLE KITS
1" to 3"

In 5 minutes you can assemble, for precision gaging, a spindle for ANY SIZE hole from 1" to 3". No auxiliary equipment needed except conventional gage blocks—NOT EVEN ONE MASTER SETTING RING.



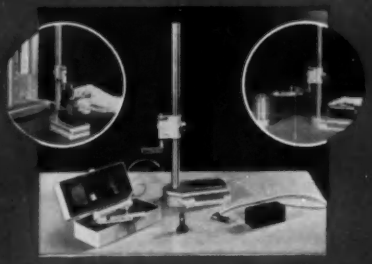
ADJUSTABLE AIREBORE GAGE KITS
3" to 12"

The Airebore Gage can be set precisely to any diameter from 3" to 12" by means of a calibrator and gage blocks. No master rings are needed.



PLUNJET ADJUSTABLE SNAP GAGES
0" to 12"

Twelve Plunjet Adjustable Snap Gages cover a gaging range from 0" to 12"—Larger sizes on special order.



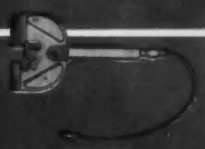
AIRETEST AND PLUNJET STAND

This stand accommodates an Airetest Indicator—also converts to a comparator or height gage by using a Plunjet or dial indicator and anvil.



SELF-CENTERING ADJUSTABLE SPINDLES
1/32" to 3"

Four Self-centering Adjustable Spindles cover respectively the ranges of 1/32" to 1/4", 3/16" to 3/8", 5/16" to 1 1/16" and 1 1/2" to 3". All but the smallest can be set with gage blocks.



STANDARD ADJUSTABLE AIRSNAPS
1/4" to 5 1/2"

Available in 17 models to cover the range .2500" to 5.500". Up to 3.000" the anvil has an adjustment of 1/4"—above that, 1/2".

7337

MASTER CRAFTSMAN GOLDEN ANNIVERSARY HEADQUARTERS

SHEFFIELD

manufacture and measurement for mankind

Call Your Sheffield Representative for a Demonstration in Your Plant

German Automobile Output Soars

By J. H. W. Kerston

REFLECTING some of the energy that led the United States automobile industry to record production in 1955, West German manufacturers, too, topped all previous records, developing new selling techniques and making their impact felt throughout the world.

In what was termed "a spectacular turnabout" in the *Journal of Commerce*, Germany emerged for the first time as the leading exporter of foreign cars to the United States. While U. S. imports of cars expanded by some $17 million to $56 million in the first nine months of 1955, Germany shipped 23,000 units, valued in excess of $26 million during this period, a five-fold increase over the corresponding period of 1954, when its volume represented only one-fifth of of the leading importers' share.

Although Mercedes and Porsche boosted their sales, the gain was largly due to Volkswagen exports, which were expected to reach 35,000 in 1955, as against 8000 in 1954, and 3000 in 1953. In the Canadian market Germany had already doubled her 1954 exports in the first half of 1955.

All of the 2640 cars, except 38, were Volkswagen.

Daimler-Benz of North America, Inc., U. S., representatives of Daimler-Benz AG, Stuttgart, makers of Mercedes-Benz cars and trucks, announced that, in conjunction with American interests, a factory for the production of Mercedes-Benz and Unimog trucks would be established on this continent.

Volkswagen Finances

Volkswagen sprang another surprise when, in a situation similar to Ford's eagerly awaited revelation of its finances, it finally decided to let the public and the automobile world in on its financial secrets for 1951-54. Organized as a limited company, Volkswagen had been able to withhold this information, pending the outcome of long-standing legal battles with so-called "Volkswagen-Savers." These citizens had paid in full or in part for their cars, before the war, but failed to get delivery then, because passenger car production never got started. To satisfy these possible claims, the report showed, Volkswagen placed $34,720,000 in reserve. Publication of these figures implies, however, that VW is now sure to win the last of these lawsuits and does not mind letting the savers know how much was at stake. It also implies that the price of the Volkswagen may be reduced. Even without any price reduction, VW reported $252 million in 1954 sales, with a gross profit of $89 million. "The little rear-engined 'beetle'," said the New York *Times* in a Reuters dispatch, "is threatening to run away from the panting competition."

The revelation of VW finances is also believed to be a first step toward the sale of the enterprise to private ownership. Currently Volkswagen has no owner. It is being supervised by the German Government, which has legislation for its sale in preparation.

Mercedes Plans

Nearly as calamitous as it was surprising to European automobile fans,



was Mercedes-Benz's withdrawal of its record-smashing race car team from continental competition. Such racing is a matter of national pride and commands as much interest in Europe throughout the year as Indianapolis holds here on Memorial Day. Mercedes-Benz explained that, for the time being, the many engineers and technicians, required for racing, could be more usefully employed in adapting proved features to production cars. As a result Mercedes introduced this year a 175-hp, fuel injection production engine. Mercedes has also adapted its race-tested, single-joint rear axle to its production cars.

Market Expansion

The pattern of German car sales led to the expansion of its domestic and foreign markets. Due to the substantial improvement in Germany's economy, cars are gradually losing their luxury status and rapidly replacing motorcycles.

In the first half of 1955, 25 per cent of cars were sold to wage earners, who had accounted for only 18 per cent the year before. Such an expansion of purchasing power has increased the demand for cars, particularly since the used car market operates only on a small scale. Euopeans keep their cars for 10 years, on an average.

At the same time Germany also boosted her exports by one-third over the 1954 volume. In the first eight months it had exported 45 per cent of its production. In Sweden, for example, the preference for German cars rose from a 23.1 per cent share in total sales during the first half of 1954, to 49.2 per cent in the corresponding period of 1955.

In order to keep up with the demand the German automobile industry was producing 22 times as many cars as in 1948, or double the number produced in 1938, its best year before the war. In 1955 its production represented a 38.7 per cent increase over 1954, somewhat smaller than the gain registered during the previous period. Although such firms as those in the Borgward combine were able to expand their production for Borgward cars by 38.7 per cent, for Goliath 54.3 per cent, and Lloyd 77 per cent during the first half of 1955, most German car makers had to initiate extensive expansion programs. Among these firms were Mercedes, Volkswagen, Opel and Ford. Opel is the prosperous General Motors subsidiary in Germany. It is investing $72 million to increase its present production capacity of 640 cars daily to 1000 by 1957. Ford, a successful subsidiary of the American parent company, plans to augment its 8700 employes with 5000 more workers, when its construction program is completed. This expansion program will increase its production from 79,000 to 135,000 annually, or from 240 to 450 daily by continuing a two-shift, five-day week. The cars and trucks, produced by Opel and Ford, are designed to European requirements and bear little resemblance to the American models.

New Plants

Mercedes, too, will invest nearly $50 million, during the next three years, for modernization and expansion, while Volkswagen is completing a new plant in Hanover to begin production in March 1956. The factory has been supplied with many North American, Swiss and British machines. It is designed for production of the larger VW model, which is sold as a station wagon, panel truck or nine-passenger bus. Since every fifth

WAUSAU

Alloy No. 2

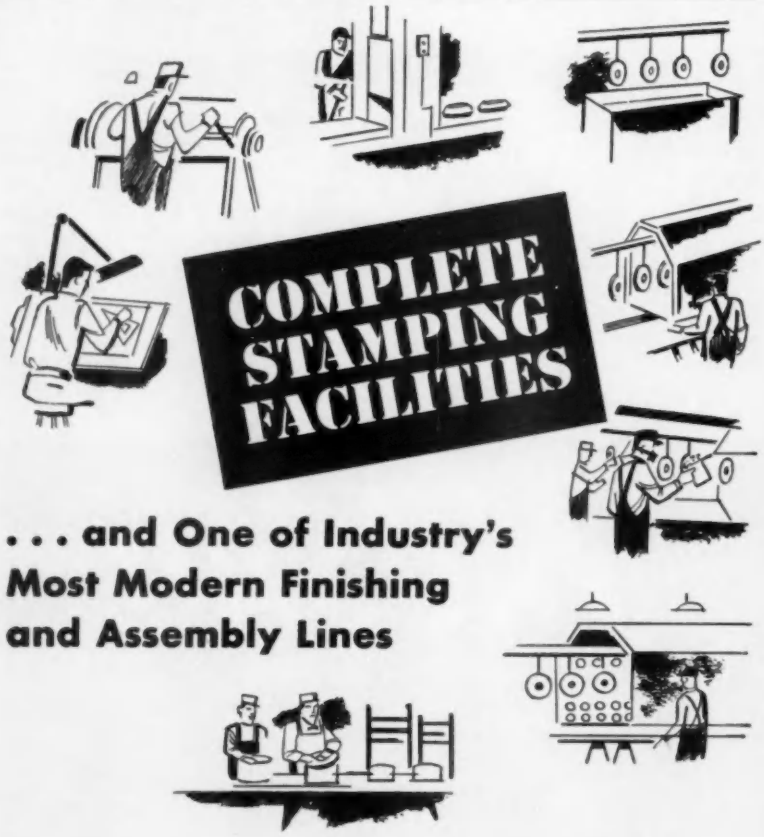


Valve Seat Inserts

that stay tight in aluminum



Developed especially for aluminum alloy engines Wausau Alloy No. 2 Valve Seat Inserts have the same expansion characteristics as many popular aluminum alloys. Result: a tight seat that won't work loose. These inserts have high impact resistance which is work-hardened in use. They are corrosion resistant and extremely stable under heat, resisting burning and distortion under severest operating conditions. Alloy No. 2 inserts are available in a wide range of types and sizes to fit your specifications. Call or write *Wausau Motor Parts Company, 2200 Harrison Street, Wausau, Wisconsin.*



. . . and One of Industry's Most Modern Finishing and Assembly Lines



If a stamped part goes into your product, Follansbee's Sheet Metal Specialty Division can offer you facilities that include design through assembly and packaging of the complete unit!

Modern equipment that will help reduce your costs will also put the best finishing touches on your product. Experienced engineers will work with you in designing or redesigning your component parts.

Call Follansbee engineers in early to discuss your stamping problems. A cost analysis on your job will be submitted without obligation.

SHEET METAL SPECIALTY DIVISION



Box 567—Follansbee, W. Va.

a Division of

FOLLANSBEE STEEL CORPORATION

Follansbee, W. Va.

unit produced at the Wolfsburg plant was a larger model, additional capacity will be available there for car production. In addition, the Wolfsburg factory will undertake a modernization program as part of a two-year capital investment plan, that will boost its 1956 output by 20 per cent to 400,000 units, or from 1250 to 1500 daily, the highest in Europe. This plan is in conformity with Volkswagen aims of keeping both car design and production methods constantly improved rather than to retool annually for so-called new models. As a result, the Volkswagen has maintained the same streamline body contour as the 1947 models, a fact appreciated by VW owners, because their cars have a greater resale value. Among the improvements, introduced this year, are roomier interiors, larger trunk space and dual exhausts. Although Volkswagen has not introduced new models, there have appeared new body shells, made by outside firms, for VW chassis. One of these, an Italian Ghia design, produced by Karmann, is winning great popularity. It is, however, available only in limited quantities.

Modernization of Factories

The German automobile industry expects that modernization and expansion will enable it to supply the constantly increasing demand without increasing prices. In the past such measures have helped the industry to reduce the price index for cars from 100 to 99 at present, in spite of coal's rise to 155, and steel's to 178. It is thought that with an estimated $250 million to be invested by the entire industry, German car and truck registration, now at 1.3 million, will reach 2 million by 1959, and 3 million by 1963.

Such a growth potential is possible, since only one out of every 38 West Germans owns a car, as against one car for every third American. By such reckoning Germany placed 14th and lagged behind some of its best export customers, such as Sweden, Belgium, Denmark, Switzerland, etc. Yet, Germany continued to maintain its position, gained in 1954, as the world's third largest builder of motor cars, by producing 700,000 in 1955 as against 518,200 in 1954, and 140,000 trucks as against 113,000 during the preceding year. It exported 400,000 vehicles, or 100,000 more than in 1954.

Industry Gains

These gains helped to increase the automobile industry's share in the German production value from 4.4 per

(*Turn to page* 486, *please*)

LORD Dynaflex® joints absorb 12-ton driving loads, need no lubrication

LORD Dynaflex Joints, used at torque rod ends on the giant 40 and 55-ton Dart trucks, have load ratings of 12 tons along the rod. They can absorb the brutal beating of off-highway jolts several times the 12-ton driving loads. Yet these super-tough bonded rubber joints last longer than metal units . . . and never need lubrication.

The new high-capacity LORD Dynaflex Joints virtually eliminate pivot point maintenance and operating wear. No metal rubs against metal. The specially compounded flexing element not only absorbs the tremendous driving loads but accommodates angular deflections of ± 2½° and torsional deflections of ± 16°. Simple, compact design requires no close machining tolerances, adapts to present space limitations with little or no change in mating parts.

LORD Dynaflex Joints are economical, can be specially engineered by LORD to your pivot point application—spring eye, load equalizer beam, trunnion, steering axle, radius rod, drawbar connection, boom pivot or others. Take advantage of assembly and maintenance cost savings by using LORD's unsurpassed experience in the design of bonded rubber pivot joints . . . contact your nearest LORD Field Engineer or write the Home Office, Erie, Pennsylvania.



DYNAFLEX JOINT—Twelve bonded rubber joints specially engineered by Lord are used on each Dart truck. Specially compounded flexing element is permanently bonded to inner steel members.



WORLD'S LARGEST TRUCKS—New spring suspension system for off-highway Dart trucks employs resilient Lord Dynaflex Joints at torque rod ends. These long-lasting, lubrication-free pivots accommodate torsional and angular motion, withstand full driving and braking loads.

NEW YORK, N. Y. - Circle 7-3326 • PHILADELPHIA, PA. - LOcust 4-0147
CLEVELAND, OHIO - SUperior 1-3242 • DAYTON, OHIO - MIchigan 8871
DETROIT, MICH. - TRinity 4-2060 • CHICAGO, ILL. - MIchigan 2-6010
DALLAS, TEXAS - RIverside 3392 • LOS ANGELES, CAL. - HOllywood 4-7593
"In Canada—Railway & Power Engineering Corporation Limited"

LORD MANUFACTURING COMPANY • ERIE, PENNSYLVANIA

LORD BONDED RUBBER

designers and producers of bonded rubber products since 1924



NEW KNIGHT

carries 35% extra



The roof, roof bows, side walls, side rails, reinforcements and doors of the new Volume Van are fabricated from high tensile strength stainless steel. The Van is 35′ long, 11′ high and utilizes 94″ of space out of a possible 96″ of legal outside width. Inside length is only 4½″ less than the overall length. The "Shot-weld" process of construction, developed and employed by The Budd Company in producing panels, etc., fuses the entire stainless steel structure into one integral unit.

REPUBLIC

REPUBLIC STEEL

World's Widest Range of Standard Steels

OF THE OPEN ROAD

payload in lightweight armor

of STAINLESS STEEL

It's the Fruehauf Trailer Company's new Stainless Steel Volume Van.

Stainless steel trailer construction is not new in itself. Stainless steel trailers have been used for years by both large and small fleet operators for transporting milk, meat, produce and frozen foods. They have found that the corrosion-resistant and sanitary qualities of stainless steel cannot be matched for use in refrigerated trailers.

Stainless steel trailers are also at the top of the list for carriers of salts, acids and other chemicals that attack other metals used in trailer construction.

Stainless steel's exceptionally high strength-to-weight ratio has made it possible to design this completely new trailer with 35% extra payload capacity.

Stainless steel construction permits the use of thinner, lighter sections—without loss of strength, without sacrifice in safety. Yet with long life assured at the lowest ultimate cost.

Republic—maker of ENDURO Stainless Steel and world's largest producer of alloy and stainless steels—is proud of its contribution to the new Volume Van. And we offer you the services and knowledge of our metallurgical and engineering departments in helping you use stainless steel to give your product strength without added weight or make it look better and last longer.

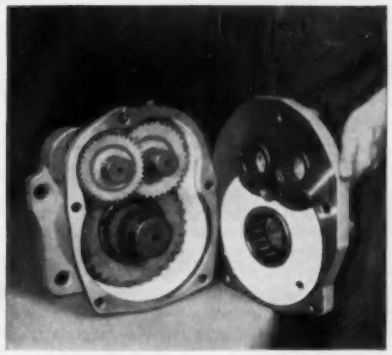
Just send us the coupon for more information.

Here are two more Republic products with advantages for equipment builders



NEW USES FOR REPUBLIC NYLOK NUTS are constantly being developed. In this tie-rod clamp assembly they provide positive locking and ease of adjustment. They are ideally suited for mechanical feeding and power wrenching because either end is up. Republic Nylok Nuts lock whether seated or not. Cut maintenance costs, too. They can be backed off for parts inspection or adjustment and then can be re-used.

EXTRA STRENGTH WITHOUT EXCESS WEIGHT is built into parts when you design with Republic Alloy Steels. These fine steels provide an outstanding combination of qualities essential to safety in designing equipment to carry heavier loads at higher speeds. Alloy steels lengthen service life in transmissions, bearing, shafts, axles, etc. Republic metallurgists are available to help you use these steels to the best advantage in your product.



STEEL

and Steel Products

REPUBLIC STEEL CORPORATION
Dept. C-1436
3106 East 45th Street
Cleveland 27, Ohio

Please send more information on:

☐ ENDURO® Stainless Steel Intended Use_____

☐ Nylok* Nuts ☐ Alloy Steels

* U. S. Pat. No. 2,450,694 and pending applications.

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

German Automobile Output Soars

(*Continued from page* 482)

cent to 4.8 per cent, while its share in exports of finished industrial products rose from 21.7 per cent to 33.8 per cent. Moreover, the industry, its suppliers, sales and service agencies provided employment for 1½ million people, who accounted for more than 10 per cent of Germany's gross national productivity.

AI TABLOID

(*Continued from page* 73)

Beryllium Corp. has taken over Precision Casting Corp. . . . Rockwell Mfg. Co. has acquired the assets of Locomotive Finished Materials Co.

Alfa Romeo has begun experimental production of its sports car in the Willys Mexicana, S.A., plant at Tlalnepantla, Mexico.

* * *

Impax, Inc. has been established by Universal Match Corp. for the production of precision aluminum impact extrusions.

* * *

American Society for Testing Materials has set up a special administrative committee on nuclear problems.

* * *

Precise Products Corp. is moving into a new plant at Racine, Wis. . . . Anglo American Aviation Co. has moved to a new plant in Burbank, Calif.

* * *

International Business Machines Corp. has developed a new bombing and navigational system for the Boeing B-52 bomber.

* * *

Redmond Co., Inc. is building a new plant at Angola, Ind., where it will produce a new addition to its line of fractional horsepower electric motors.

* * *

Lockheed Aircraft Corp. has received a new $60 million Navy order for WV-2 early warning radar planes.

* * *

The ASTE National Standards Committee has published a revised Data Sheet Numerical Index. . . . National Screw Machine Products Association has announced the start of a fifth volume on quality control.

* * *

Baird Associates, Inc., has developed a device called an evaporograph for viewing objects in total darkness.

* * *

Girdler Co. has announced that seven major European companies have been licensed to use the Elastomer process in the production of vinyl foam.

* * *

Vickers Armstrongs, Ltd., is said to have developed a new Vanguard airliner. Scheduled for delivery in 1959 and 1960, it will use the new powerful Rolls-Royce RB-109 turboprop engine.

(*Turn to page* 490, *please*)





from
stylist's drawings
to finished cabs
with
"eye appeal"

ALLEN TAKES THE JOB ALL THE WAY

A talent for bringing eye-appeal and practicality together has made Allen leader in cabs for industrial trucks, tractors, motor graders, front-end loaders, off-highway trucks and similar equipment.

Allen appreciates what the stylist has strived to achieve, and what you, the customer, want in the finished product. Making engineering drawings from stylists' renderings is an old story with Allen. So, too, is the manufacture of cabs which meet the demands of work-a-day use and abuse. And, Allen doesn't stop here. Allen follows through with field service and service parts. In steel, in plastics, in other materials Allen experience can help make *your* machines better looking, safer, more practical to operate in every kind of weather.

Allen's complete service can save you engineering man-hours and money. Mail the coupon or telephone WOodward 2-8578 for full information.

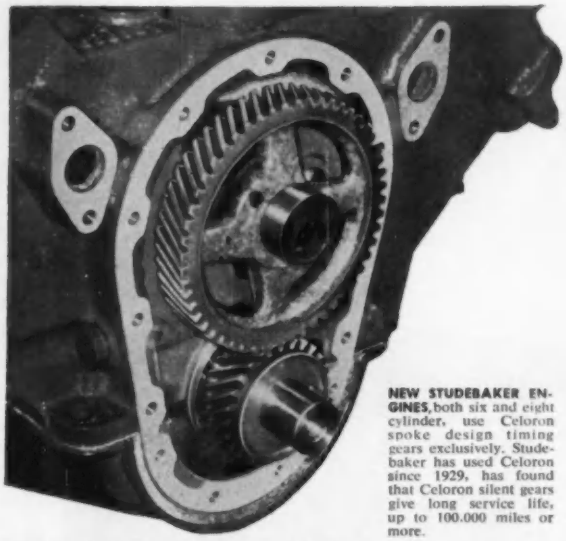
ALLEN INDUSTRIAL PRODUCTS, INC.
BATTLE CREEK, MICH.
WOodward 2-8578

America's foremost designers and builders of cabs for industrial trucks and construction machinery—shovels and plows for industrial trucks.

ALLEN INDUSTRIAL PRODUCTS, INC.
LIBERTY STREET, BATTLE CREEK, MICH.

☐ Send details on cab design and building service.
☐ Send representative.

Name_____ Title_____
Company_____
Street_____ City_____ State_____
Specify type, make and model of equipment_____



NEW STUDEBAKER ENGINES, both six and eight cylinder, use Celoron spoke design timing gears exclusively. Studebaker has used Celoron since 1929, has found that Celoron silent gears give long service life, up to 100,000 miles or more.

engineering design

CELORON®

by John A. Petho, Development Engineer
Celoron Division, Continental-Diamond Fibre Division of
The Budd Company, Inc.
Bridgeport, Pa.

The basic requirements for automotive timing gears are smooth transmission of power, quietness and reasonable service life. Depending on the installation these requirements will have varying degrees of importance which can be controlled to a large extent by the selection of the material, design, and quality of workmanship.

Material and design are closely related, but only too frequently changes in the powerplant have been made without corresponding changes in design and material. For this reason, a brief review is given of the design advantages of Celoron, a cotton fabric-based gear material, and of Celoron laminated rim timing gears.

WHAT IS CELORON?

It is the trademarked name of over 30 years standing for a laminated or macerated molded industrial plastic made only by C-D-F for a wide range of gear and mechanical and electrical insulation needs. It designates one of the best, if not the best, high impact molded fabric phenolics for mechanical applications. For timing gears, a phenolic type resin bonds the laminated and macerated cotton fabric into a blank that has the required mechanical strengths. Over the years, we have learned the importance of selecting cotton fabric with the proper weave and weight. Consequently, the design engineer has been given a gear with greater strength, less and more uniform tooth wear, quieter operation.

TYPES OF GEARS MADE FROM CELORON

For original equipment, the laminated rim construction has become standard with two types of construction between the rim and the hub. The gears can be light, medium or heavy duty types. The weight of the fabric used for the gear rim is controlled by the DP of the gear. The WEB gear offers a quality gear with the least possible finishing. The SPOKE gear incorporates many fundamental principles of design long used for quieter operation and longer life. The spokes absorb most of the critical vibrations, have greater resilience and flexibility. However costs are slightly higher.

COMPARATIVE AVERAGE PROPERTIES

	Laminated (rim)	Macerated (web or spoke)
Tensile Strength, psi	10,000	6,500
Flexural Strength, psi	20,000	10,000
Compressive Strength, psi	38,000	25,000
Shearing Strength, psi	12,000	8,500
Izod Impact Strength, flatwise (Notched in ft. lbs. per 1" of notch)	4.0	2.3

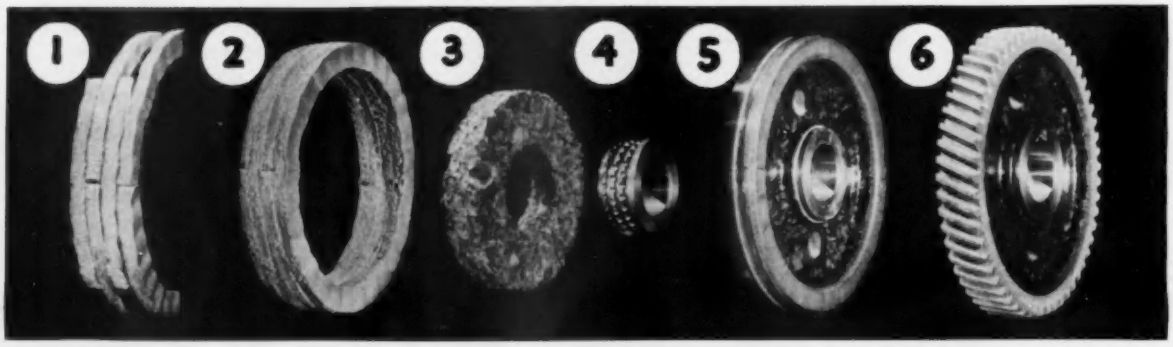
UNIFORM TOOTH STRENGTH

The segments forming the gear rim are punched in such a way that the stronger direction of the fabric is used to form the flank of the gear tooth. This results in a stronger, uniform gear.

WEB FLEXIBILITY

To mold a non-uniform cross section web, laminated construction cannot be used. The treated canvas is macerated to permit shape molding. An important factor of web strength is the size of the particles used. Too large or too small particles will reduce the strength and influence the moldability of the gear. It is necessary to control the weight of each cake of macerated material, assuring a better quality gear.

The molding of the gear web permits the designer to introduce various degrees of flexibility to the gear. In some helical gear installations the service life of the gear can be directly related to flexibility. This is a problem which can be best solved by experience, knowledge of the material and complete knowledge of requirements of the installation. Unfortunately, all these factors are very seldom at the command of the gear designer.



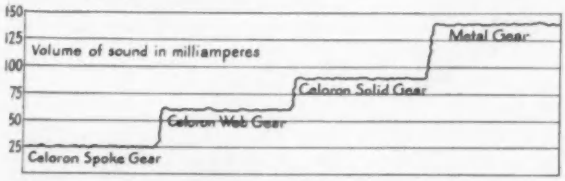
HERE IS HOW a Celoron gear gets its higher tooth strength, more flexibility, greater impact resistance: 1. A special grade of tough cotton is coated with phenolic varnish, then cut into strips and punched into segments. 2. These segments are staggered and piled up into the outer rim which will become the gear teeth. 3. The web or inner ring is made of macerated cloth —gives the gear its side flexibility. 4. The metal bushing is inserted and the make-up is put in to the mold. 5. The resin softens, the coated fabric flows and fills the mold. On hardening, a strong Celoron gear blank is produced. 6. Teeth are then cut in the laminated rim. Tests show they have higher impact strength and more resistance to wear!

advantages of C-D-F LAMINATED RIM

TIMING GEARS

SOUND HARMONICS OF CELORON

There is no mechanical motion without friction. Friction develops vibrations which are in turn transmitted to the air, thereby producing noise. As all sound is characterized by waves of definite frequency and amplitude, these characteristics of frequency and amplitude enter into a consideration of gear noise. Frequency of a gear noise is determined by the number of tooth contacts per second.



Amplitude of a gear noise is the result of a number of factors, such as the material and shape of the gear and gear housing.

Celoron has a natural low tone frequency and design changes in the structure of the web further reduces the tendency of noise pickup. With a spoke design, it is possible to break up the continuous line of sound between the hub and rim, practically eliminating the pickup and amplification of sound.

HORSEPOWER RATING OF CELORON

Because Celoron is a non-metallic material, when calculating the horsepower rating of Celoron timing gears, use this modification in the velocity factor of the Lewis Formula.

$$\text{Velocity factor} = \frac{150}{200+v} + .25$$

$$\text{SWS} = 6000 \times \frac{150}{200+v} + .25$$

$$\text{HP} = \frac{0.000095 \times \text{SWS} \times \text{FW} \times \text{Y} \times \text{PLV}}{\text{DP}}$$

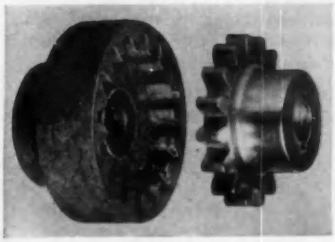
This formula, adopted by the American Gear Manufacturers Association, takes into consideration the characteristics of Celoron. Results obtained in service have supported its use.

POSITIVE KEYING

Celoron which basically belongs to the plastic family has one of the disadvantages of plastics which is a limited amount of compressibility or plastic flow when subjected to a continuous load such as exists at the keyways. To overcome this characteristic and to distribute the loads at the keyway, a steel bushing is molded in the Celoron gears for the bore and the keyway. The steel bushing is anchored to the Celoron, in the molding operation, with staggered interrupted splines instead of the customary diamond knurls. This method is a C-D-F development.

GEARS VERSUS CHAINS

It would be presumptuous of me to set down all the pros and cons of this engineering tug-of war. C-D-F naturally believes in gear timing and has worked to apply Celoron to its fullest use.



CELORON FLEXIBLE COUPLINGS are designed for horizontal as well as vertical drives. The female end of the sprocket type coupling is molded of macerated Celoron which transmits power smoothly and quietly. Write for folder CS-53 with design-ordering information.

Here are a few random quotes, not from plastics engineers, but from automotive design engineers:

"Our experience indicates that timing gears are extremely satisfactory. Probably one of the problems in satisfactory timing gear life is associated with crankshaft stiffness and the fact that the V-8 engine has a relatively short rigid shaft makes a timing gear ideal for this type of engine."

ANOTHER INTERESTING ONE: "From a cost standpoint the gear drive is less expensive than the timing chain drive."

AND ANOTHER: "Even the shortest camshaft drive chains consist of approximately 450 parts. Each of these parts is subject to wear. It is evident that even the slightest trace of wear on each individual part will add up to quite an imposing total for the entire chain. A gear drive for a camshaft has only two parts to wear. Even then the wear is distributed over the entire tooth width instead of being localized."



C-D-F laminated rim Celoron web gears with metal gear.

SUMMARY ON CELORON

The foregoing are a few of the points which make Celoron a desirable material for automotive timing gear applications. There are many more from a cost and customer service standpoint. The material is being continually improved and in its 30 years of existence the only thing remaining of the original material is the name of Celoron. New resins, new fabrics, new methods of molding have made Celoron stronger and lower priced. Semi-automatic molding operations provide open capacity for supplying Celoron. Plant capacity has been steadily increased each year since 1946.

However, all the good inherent properties of Celoron can be destroyed by faulty design. It is always a good policy to discuss the design problems with the manufacturer of the material. Write for test data and samples. C-D-F wants to help you, is a big reliable source of supply!

CONTINENTAL DIAMOND FIBRE

CONTINENTAL-DIAMOND FIBRE DIVISION OF THE BUDD COMPANY, INC.
NEWARK 2, DELAWARE

Lepel
HIGH FREQUENCY *Induction* HEATING UNITS

BRAZING
HARDENING
BOMBARDING
SOLDERING
ANNEALING
MELTING

The Lepel line of induction heating units represents the most advanced thought in the field of electronics as well as the most practical and efficient source of heat yet developed for industrial heating. With a background of half a century of electrical and metallurgical experience, the name Lepel has become the symbol for quality in induction heating equipment embodying the highest standards of engineering achievement, dependable low cost operation and safety.

If you are interested in the application of induction heating you are invited to send samples of the work with specifications of the operations to be performed. Our engineers will process these samples and return the completed job with full data and recommendations without any cost or obligation.

TYPICAL INDUCTION HEATING APPLICATIONS



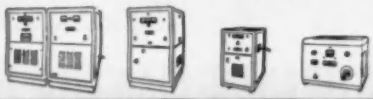
The illustration shows a lens grinding block being heated within the dome-shaped work coil. The heat generated in the metal block softens the pitch enabling the operator to remove the ground lenses and insert the next batch. The entire operation is completed in a few seconds.



A widely used application in which several assemblies, consisting of a brass body, six radiator fins and a mounting stud, are being soldered simultaneously. The production of similar parts can be further increased by using two work coils and a change-over switch.

Electronic Tube Generators—1 KW; 2½KW; 5 KW; 10 KW; 20 KW; 30 KW; 50 KW; 75 KW; 100 KW.
Spark Gap Converters 2 KW; 4 KW; 7½ KW; 15 KW; 30 KW.

WRITE FOR THE NEW LEPEL CATALOG . . . 36 illustrated pages packed with valuable information.



All Lepel equipment is certified to comply with the requirements of the Federal Communications Commission.

LEPEL HIGH FREQUENCY LABORATORIES, INC.
55th STREET and 37th AVENUE, WOODSIDE 77, NEW YORK CITY, N. Y.

AI TABLOID

(*Continued from page* 486)

Goodyear Aircraft Corp. has developed a radar simulator which trains pilots in tactical use of all-weather radar equipment. . . . Lockheed Aircraft Corp. has developed a new cargo-loading device called an Aerobridge.

* * *

Third Annual Material Handling Training Conference will be held from June 17 to 30, 1956, at Lake Placid, N. Y.

* * *

International Business Machines Corp. has announced a multi-million dollar expansion of its West Coast operations and plans to establish new manufacturing, engineering and educational facilities in Rochester, Minn. . . . Reeves Instrument Corp. has taken over a modern $5 million plant and added facilities at Mineola, N. Y.

* * *

Beech Aircraft Corp. has formed a subsidiary for guided missile and other research.

* * *

Fred S. Gichner Iron Works, Inc. plans to build a truck body building shop, trailer shop, and other facilities at Ammendale, Md.

* * *

Austin Motor Co. has announced an overdrive unit providing semi-automatic control of the gearbox for its A50 Cambridge model.

* * *

International Harvester Co. has announced a $10 million expansion program for its Wisconsin Steel Works at Chicago.

* * *

Rheem Mfg. Co. and Richmond Radiator Co. have agreed to merge.

* * *

Heli-Coil Corp. has purchased the manufacturing facilities of Towle & Son Co. . . . Stillman Rubber Co. has acquired Extruded Products Co. . . . Babb Co., Inc. has acquired the entire engine overhaul facilities of Pacific Airmotive Corp.

* * *

Republic Aviation Corp. is ready to produce in volume a new jet engine muffler.

* * *

Minneapolis-Honeywell Regulator Co. has established a new subsidiary in Vienna, Austria.

The Engineer from Continental Screw Co. ...



...makes Phillips "Bits-Holders-Screws" for you—another exclusive from Continental

This 3-way fastening combination makes power-driving practical

Manufacturers have cut fastening costs up to 50% by switching to Continental's Phillips "Bits-Holders-Screws." This 3-way fastening combination, exclusive with Continental, makes power driving really practical—even on your finished parts.

Did you know, for example, that just one size Phillips Driver will drive 85% of all Phillips Screws used in industry? And just four sizes of Phillips Drivers will fit the entire range of screw sizes?

Remember, no other company makes Phillips "Bits-Holders-Screws." And Continental offers you a complete selection of other Phillips fasteners, too. Talk to the engineers at Continental about the money you can save with power driving. Call them today.

Free Booklet: Continental Screw Co. offers you a free booklet on Hy-Pro Phillips Insert Bits and Holders. Just send your name and address to Continental Screw Co., New Bedford, Mass.

Only Continental Makes

Phillips "Bits-Holders-Screws"



MEMBER OF THE SCREW RESEARCH ASSOCIATION

CONTINENTAL SCREW COMPANY INC. 1904

—You can count on Continental.

Continental Screw Co.

Manufacturers of Holtite Fastenings

New Bedford, Massachusetts, U.S.A.



Maybe you need *both*

New, automatic machines speed production and cut costs . . . but you can still end up without saving a nickel if hand assembly methods can't match the pace of your machinery.

Sometimes, of course, automatic assembly isn't practical. But if you can use automation to produce parts, it's highly probable you can show spectacular savings with special assembly machines . . . designed by Barnes & Reinecke.

There's no pat formula about the way B&R engineers tackle production and assembly problems. Our people study your product, market, present plant, equipment and methods. If automation's the answer, we're equipped to design and produce the special machines you need. If it isn't, we can show you why it isn't . . . and recommend other methods that will do a better job for you.

Our clients include small businesses as well as some of the top names in American industry. Why not let us tell you more about what we do and how we work? There's no obligation. Call or write.

Barnes & Reinecke, Inc.

234 EAST OHIO ST., CHICAGO 11, ILL. • DElaware 7-6350

SERVING BUSINESS AND INDUSTRY SINCE 1934

Industry News

(*Continued from page* 85)

GMC Truck Models for 1956 Incorporate Many Advances

Further details have been announced on the product advances incorporated in the GMC Blue Chip light and medium-duty truck line for 1956 (see AI, Jan. 15, p. 36). The improvements range from more powerful V-8 and six-cylinder engines to road shock dampers and new axles.

One V-8 and three six-cylinder gasoline engines power the new GMC models. With a displacement of 316 cu in. and a 180-hp rating, the new V-8 is available for every basic model in the entire 100-370 series.

The six-cylinder power plants also have higher horsepower ratings. One with 130 hp is offered in 100-300 models; another with 140 hp in the model 350 and 370 medium-duty trucks; and a third in the package delivery models achieving 120 hp.

Other features of the 1956 GMC light and medium-duty models include: power steering as optional equipment on models 100-250; optional power take-off gear box for power take-off conversions in Hydra-Matic models 350 and up; and a new six-stud wheel that is standard equipment on all 350 and 370 series models.

Automatic Transmissions Used Widely in Plymouth Taxicabs

Plymouth is currently equipping about 64 per cent of its standard cars with automatic transmissions. The ratio of installations in taxicabs, however, is markedly higher.

The division notes that 90 per cent of the cabs it built for the New York market were ordered with automatic shifts, although the percentage is not as large in other cities. Plymouth estimates that about 30 per cent of the cabs it builds this year will have automatic transmissions.

GM's Traveling Science Shows Draws Seven Million Visitors

The General Motors Parade of Progress, a traveling science show, has drawn more than seven million visitors since it started its road tour in April, 1953. Since that time the show has traveled more than 16,600 miles in the U. S. and Canada and has visited more than 125 cities.

(*Turn to page* 494, *please*)

Ask about amp's Creative Approach
TO BETTER WIRING

for every automotive application



A-MP terminals

Wherever there's a wire in a car there's an A-MP Terminal to connect it.

- Top electrical and mechanical performance.
- Accepted by leading auto and truck manufacturers.
- Patented pressure-crimp eliminates all soldering and welding.
- A-MP Automachines crimp up to 4000 perfect, uniform terminations per hour with unskilled labor.
- A-MP Sales Engineers' electrical terminal knowledge in the auto industry will be valuable in solving your most difficult wiring problems.

AIRCRAFT-MARINE PRODUCTS, Inc.
General Office: Harrisburg, Pa.

A-MP of Canada, Ltd., Toronto, Canada
A-MP—Holland N.V., 's-Hertogenbosch, Holland
Aircraft-Marine Products (G.B.) Ltd., London, England
Societe A-MP de France, Courbevoie, Seine, France

A-MP

Industry News

(*Continued from page 492*)

Youngstown Sales, Income Hit New Heights in 1955

Youngstown Sheet and Tube Co. has reported that its net income for 1955 was $41.7 million, more than double the earnings of $20.1 million in 1954. Sales and other revenues amounted to $626.9 million in 1955, compared to $433.4 million in 1954.

Willys Forecasts Rise In First Quarter Sales

At least one automotive company is highly confident that its sales during 1956 will top last year's. The company is Willys, which bases much of its optimism on the increasing market for its vehicles abroad.

It estimates that its foreign sales for the first quarter will increase more than 19 per cent above the same three months last year. Willys last year shipped more than 40,000 vehicles abroad.



KAMAN FLYING BARREL

Kaman Aircraft Corp. is working on a Navy experimental contract for studies of an aircraft of tubular shape without a conventional wing. The plane would have a circular body inside a barrel-shaped wing that is open at both ends. Propelled by either a reciprocating or jet engine, the novel machine would rise vertically and move into a nearly horizontal position for forward flight.

Automotive Workers Take Cent-an-Hour Pay Slice

A drop in the cost of living index has reduced the pay of some one million automotive workers by one-cent an hour. A further dip is expected this month (March).

The Bureau of Labor Statistics Index for Jan. 15 showed that the cost of living dropped to 114.6 from 114.9 on Oct. 15. Lower prices for food and house furnishings were the principal causes of the drop in consumer prices.

Chrysler Division Drops One Shift At Two Plants

Chrysler Div. last month (Feb.) became the last Chrysler Corp. division to cut down operations to a one-shift basis. The division has been operating on double shifts since last fall. The new reduced schedule will result in the laying off of about 1000 workers at the Jefferson and Kercheval plants in Detroit.

IHC Reports Sales Topped $1 Billion Mark In 1954

Sales by International Harvester Co. in the fiscal year ended Oct. 31, 1955, rose to $1.16 billion. The Motor Truck Div. accounted for 39 per cent of the total volume with sales of $455.1 million. Net income for the company last year climbed by nearly 53 per cent to a total of $55.5 million.

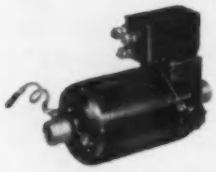
(*Turn to page 496, please*)



Explosion-proof vacuum unit.

Thoroughbred Fractional HORSEPOWER

for your motor-driven products



Aircraft windshield wiper motor.



A rugged high-torque, high-speed motor.

The unexcelled performance of Lamb Electric Motors in many types of industrial, commercial and domestic products is evidence of their outstanding quality.

Dependability and efficiency (optimum weight-size-horsepower ratio) are features that result from proper design and careful manufacture by personnel having many years of experience in the small motor field.

May we demonstrate how Lamb Electric Motors can bring these advantages — and also perhaps lower costs — to your products?

THE LAMB ELECTRIC COMPANY • KENT, OHIO

In Canada: Lamb Electric — Division of Sangamo Company Ltd. — Leaside, Ontario

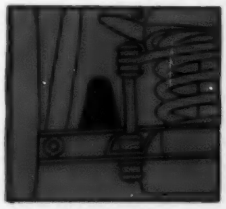
Lamb Electric

SPECIAL APPLICATION FRACTIONAL HORSEPOWER MOTORS

In over 100 places, Enjay Butyl rubber parts



add to Pontiac performance



Axle bumper



Body seals, gaskets, insulators, pads, grommets, etc.



Brake and accelerator pedal pads, bellows



Radiator and heater hoses, ducts



Gearshift lever cover

Pontiac has been using parts made of Enjay Butyl since 1946. The great '56 model now incorporates more than 100 parts made from this super-durable rubber, adding to its performance, style and value. These parts have amazing resistance to deterioration and will easily last the life of the car.

Among the many advantages of Enjay Butyl are *price* and *ready availability*. And it is now available in non-staining grades for white and light-colored parts. Extensive laboratory and testing facilities are at your service. For the full story, contact the Enjay Company today.

ENJAY BUTYL

Enjay Butyl is the super-durable rubber with *outstanding* resistance to aging • abrasion • tear • chipping • cracking • ozone and corona • chemicals • gases • heat • cold • sunlight • moisture

ENJAY **ENJAY COMPANY, INC.,** 15 West 51st Street, New York 19, N. Y.
District Office: 11 South Portage Path, Akron 3, Ohio

36 SUCCESSFUL YEARS OF LEADERSHIP IN SERVING INDUSTRY

PRECISION? DEPENDABILITY? it's Automatic!

Quality-controlled SPRINGS for all products . . .

Engine valve spring as coiled



GRINDING as done at Automatic is one outstanding example of the important operations that produce perfect springs for your product. At Automatic, springs are ground on modern, efficient equipment by skilled, experienced operators. During grinding alone, springs are given these quality-control tests:

1. Tests for squareness
2. Tests for free height
3. Tests for solid height
4. Tests for loads at given heights
5. Tests for degree of grind
6. Tests for quality of surface finish

FREE! Valuable booklet on how to specify and order springs. Send for it today.



Quality-controlled grind by Automatic



At Automatic, springs MUST conform to required tolerances.

WHENEVER spring applications are exact, **whenever** tolerances are close, **whenever** continuity of production is vital, take advantage of the dependability and efficiency of Automatic Spring Coiling Co.

for quality springs "Automatically" think of

AUTOMATIC

SPRING COILING CO.

4048 West Thorndale Ave., Chicago 30, Ill.

Industry News

(*Continued from page* 494)

Allegheny Ludlum Increases Alloy Refining Facilities

Allegheny Ludlum Steel Corp. has revealed that it is in the process of doubling its capacity for refining high alloys and superalloy steels in consumable electrode vacuum remelting furnaces. Two new furnaces have been added at the Watervliet, N. Y., plant.

The addition will bring the number of consumable electrode vacuum furnaces to four with a total monthly rated ingot capacity of 500,000 lb. The superalloys and steels to be produced in these furnaces will be used in making better jet engine parts. However, a number of other markets are now being investigated, the company states.

Second Martin SeaMaster Is Prepared for Trials

Glenn L. Martin Co. is currently preparing the second XP6M-1 SeaMaster, 600-mph jet seaplane for continuance of flight tests. The prototype was lost on a routine flight last December.

The Navy recently accepted a Martin proposal to delay flight tests of the second craft until test equipment of the type lost in the first aircraft can be installed. This equipment will make it possible to carry out with one aircraft what had been planned to accomplish with both seaplanes under two separate test programs.

The second SeaMaster has been fitted to carry complete mine-laying and navigation systems. This equipment will be removed for the flight test units which will permit detailed instrumentation and evaluation.

Chrysler Usage of Aluminum Cuts Car Weights Noticeably

The weight of some Chrysler Corp. cars has been reduced by as much as 300 lbs during the last 30 years as a result of wider use of aluminum for certain components. Chrysler today is using about eight times more aluminum on its cars than it did 25 years ago.

Each line of cars carries from 116 to 128 parts made of the light metal. They weigh from about 68 lbs on the Plymouth to more than 80 lbs on the Imperial.

(*Turn to page* 498, *please*)



and Benefit by –

1. EXPERIENCE— Nearly fifty years of Ferry Cap know-how in satisfying customers *the world over* with special fasteners, is available to you.

2. ENGINEERING— Capable, experienced engineers and metallurgists are ready to assist you. These men are accustomed to solving difficult problems. Why not discuss your needs with us?

3. ACCURACY— You can be sure of special fasteners conforming in every detail to your specifications as a result of the Ferry Cap inspection system which provides careful, thorough inspection at *each stage of manufacture* as well as of the finished product.

4. DELIVERY— To meet customers' delivery requirements, our raw material and production scheduling is designed for *timely mass production* of special fasteners.

Full information and quotation on top quality, competitively priced, special fasteners will go forward to you promptly upon receipt of your blueprints.

The FERRY CAP & SET SCREW CO.

Pioneers and recognized specialists , cold upset screw products since 1907

2189 Scranton Road Cleveland 13, Ohio

CASE HISTORY 1

REQUIRED:

A dependable supply of this small, machined electrode to meet customer's quality and quantity needs at reduced cost.

HASSALL SOLUTION:

Hassall-designed re-heading process, involving no critical dimension changes, resulted in a 59% cost reduction to customer.



CASE HISTORY 106

REQUIRED:

Replacement for stud with insufficient head to act as stop for automatic hammering.

HASSALL SOLUTION:

Substitution of Hassall cold-headed collar nail with annular threads for greater holding power. Substantial cost savings.



SPECIALTY MANUFACTURER OFFERS SAVINGS ON SMALL PARTS AND FASTENERS

CASE HISTORY 64

REQUIRED:

An economical method of manufacturing perforating punches out of hard materials such as drill rod.

HASSALL SOLUTION:

The Hassall cold-heading process plus engineering skill overcame the difficulties presented by these alloys at considerable savings.



CASE HISTORY 37

REQUIRED:

Bumper bolt with bonded rubber cap for license plate support.

HASSALL SOLUTION:

The large head on this bolt would ordinarily call for screw machining but the two lugs under the head ruled this out. Progressive cold-heading was Hassall's answer.



Multiply these case histories a thousandfold and you'll get some idea of the variety of tough problems we crack, and the savings we effect for our customers in the course of a year.

Our cold-heading process—supplemented by secondary operations—imposes amazingly few limitations on the parts and fasteners we can make. Don't forget that we are not limited to "stock" sizes. These illustrations show that Hassall—a specialty supplier—can show you substantial savings, better deliveries and no-charge assistance at all times.

Proof? Send us your specifications or write for catalog.

John Hassall, Inc., P. O. Box 2194, Westbury, Long Island, New York.

HASSALL

SINCE 1850

NAILS, RIVETS, SCREWS AND OTHER COLD-HEADED FASTENERS AND SPECIALTIES

Industry News

(*Continued from page* 496)

Design Engineering Show Is Set for Philadelphia

The theme "Tomorrow's Products Are Tomorrow's Markets" has been chosen for the forthcoming Design Engineering Show. The exposition will be held in Convention Hall, Philadelphia, Pa., from May 14 to 17. The Machine Design Div. of the American Society of Mechanical Engineering will sponsor a conference on design engineering to coincide with the show.

One hundred and fifty companies, of the expected 200, already have engaged space to present displays. Exhibits will include components, materials, finishes, shapes and forms, and services, which are used by design engineers to make end products for consumer and industrial use.

AWS Meeting to Feature Both Talks and Displays

New developments in the field of welding engineering will highlight the forthcoming annual spring meeting of the American Welding Society. To be held at the Hotel Statler in Buffalo, N. Y., during the week of May 7, the meeting will accompany the Fourth Annual Welding Show at Memorial Hall.

Further Ford Stock Sale Does Not Appear Imminent

Reports that Ford might offer additional stock for public sale soon have been squashed by H. Rowan Gaither, Jr., president of the Ford Foundation. Mr. Gaither said he did not think it likely that any new shares would be put on the market in the immediate future. A new offer, however, could still be made at the end of this year, if the Foundation decided to do so, it was indicated.

Traffic Death Toll In 1955 Up Eight Per Cent Over 1954

The traffic death toll continues grim despite stepped up safety campaigns to curb accidents. According to the National Safety Council, 38,300 persons died last year from accidents involving a vehicle, eight per cent more than in 1954.

Only 13 states reported fewer traffic deaths last year than in 1954. It was estimated that 1.35 million persons were injured in traffic mishaps.

(*Turn to page* 500, *please*)

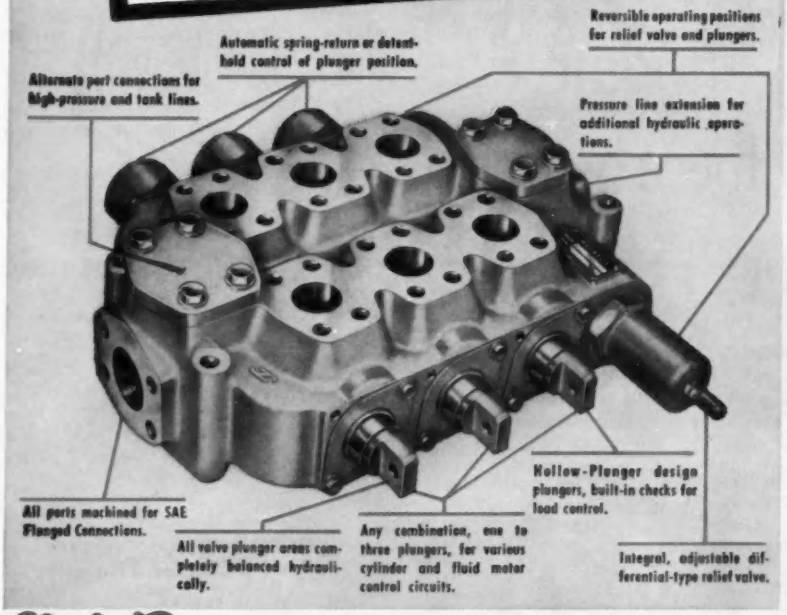
BIG VALVES FOR BIG JOBS

A New Series

HYDRECO®

HOLLOW-PLUNGER CONTROL VALVES

25-50-100 gpm to 2000 psi



Oil Power for BIG MACHINES

Built-in Checks to prevent load drop while shifting plungers . . . *Improved Throttling* for accurate control . . . *Complete Hydraulic Balance* of all plunger areas . . . this is the BIG NEWS in these new HYDRECO Valves for builders of BIG Machines. HYDRECO *Hollow-Plunger* Valves give hair-line control at *all* times, and, of vital importance with large machines handling heavy loads, there is no load drop when operating positions are changed — no sag, even when power is cut off!

These new HYDRECO Valves make single-acting or double-acting control readily available and provide control for Fluid Motors or for four-position float operation. Relief Valve adjustment and levers can be installed on either side of the Valve.

Member NFPA

Write for complete information on the new HYDRECO Control Valves and companion Hydraulic Pumps for your BIG JOBS.

KALAMAZOO DIVISION

THE NEW YORK AIR BRAKE COMPANY

9005 E. MICHIGAN • KALAMAZOO • MICH.

INTERNATIONAL SALES OFFICE, 90 WEST ST., NEW YORK 6, N. Y.

Fluid Power Speeds Turnpike Construction

CEILING ON CONSTRUCTION EQUIPMENT SIZES LIFTED

Modern turnpike construction calls for moving mountains or filling valleys . . . fast, and at lowest cost. To solve this problem, designers of construction equipment are creating machines that are bigger, faster and easier to handle than was believed possible only a few years ago. With every increase in size, weight and load the problems of operation and control multiply and exceed the ability of conventional hydraulic components to handle the job.

Engineers of The New York Air Brake Company faced this challenge and provided the answer . . . a completely new line of high capacity Gear Pumps and Valves. Today, design engineers can confidently employ circuits requiring up to 100 gpm and 1500 psi; thus lifting the ceiling on size, speed and capacity AND at realistic cost!



One of these big, new machines is the Euclid Model S-18 Overhung Scraper built by Euclid Division, General Motors Corporation, shown here. On this unit, Euclid engineers have specified big HYDRECO Pumps for fluid power and Series V28 HYDRECO Valves for control of scraper operations. A small HYDRECO Pump powers the hydraulic steering circuit. As big as these machines are, HYDRECO Oil Power gives them real "finger-tip" control.

The New York Air Brake Company also offers many other advanced type hydraulic components for designers of heavy-duty mobile equipment . . . DUDCO Dual-Vane Pumps to 150 gpm and 2000 psi; DUDCO and HYDRECO Fluid Motors; HYDRECO Control Valves and Hydraulic Cylinders.

ENGINEERS

Exceptional opportunities for men of imagination to express new ideas in the design and development of Hydraulic Components. Company expansion and progress in this growing industry promise rewarding futures for engineers who qualify. Write, giving experience and full details.

KALAMAZOO Division
The New York Air Brake Company
9005-3 E. Michigan
Kalamazoo, Michigan

Gentlemen:

I would like more information on the new HYDRECO Control Valves for BIG Mobile Equipment. ☐ Also details on HYDRECO 3600 Series Pumps. ☐

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____



Users of
GEARS
gain
these benefits
FROM FAIRFIELD

1. **MASS PRODUCTION ECONOMY** — Large or small, you get the benefits of high production rates and big volume output at Fairfield—where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY!
2. **QUALITY PLUS**—There is no finer recommendation for the quality of the product you sell than to be able to say it is "EQUIPPED WITH FAIRFIELD GEARS!"
3. **DEPENDABLE SOURCE OF SUPPLY** — Supplier of precision-made, automotive type gears for more than thirty-five years to leading builders of construction, agricultural, industrial, marine, and automotive equipment.
4. **COMPLETE PRODUCTION FACILITIES**—Unexcelled facilities in an ultramodern plant for producing Spur, Herringbone, Spiral Bevel, Straight Bevel, Hypoid, Zerol, Worms and Worm Gears, Splined Shafts, and Differentials to your specifications.
5. **ENGINEERING SERVICE**—Fairfield engineers are qualified to make expert recommendations on your gear production requirements. *Send for interesting, illustrated bulletin describing Fairfield's facilities.*

FAIRFIELD
MANUFACTURING CO.



2303
S. Concord Rd.

Lafayette,
Indiana

Industry News

(*Continued from page* 498)

L. A. Young Spring Marks 50th Birthday

L. A. Young Spring & Wire Corp. celebrated its 50th anniversary on March 14. Founded in 1906 as the Detroit Spring Wire Co., the concern has grown steadily during the last 50 years to become one of the leading producers of precision mechanical springs for various automotive applications.

The company, which assumed its present name in 1928, has enjoyed a particularly successful climb in the last 10 years. From 1946 through 1955, net sales of L. A. Young totaled nearly $462 million and net earnings topped $21 million.

In addition to its extensive line of springs, L. A. Young also has been manufacturing steel dump truck bodies, hydraulic hoists, and related products for farm and industrial equipment. It started diversifying its products about two years ago, when it acquired the Daybrook Hydraulic Corp.

The company employs nearly 6000 persons at 15 plants throughout the United States and Canada, they have a total of more than two million sq ft of manufacturing space.

Douglas Aircraft Announces Refined DC-8 Jet Transport

Details of a refined DC-8 jet transport, somewhat larger than the model originally reported, were announced recently by Douglas Aircraft Co.

The new airplane has a wingspan of 139 ft 9 in. and a length of 148 ft, 10 in. Cruising speeds remain unchanged, but maximum range has been increased to 6720 miles on the intercontinental model.

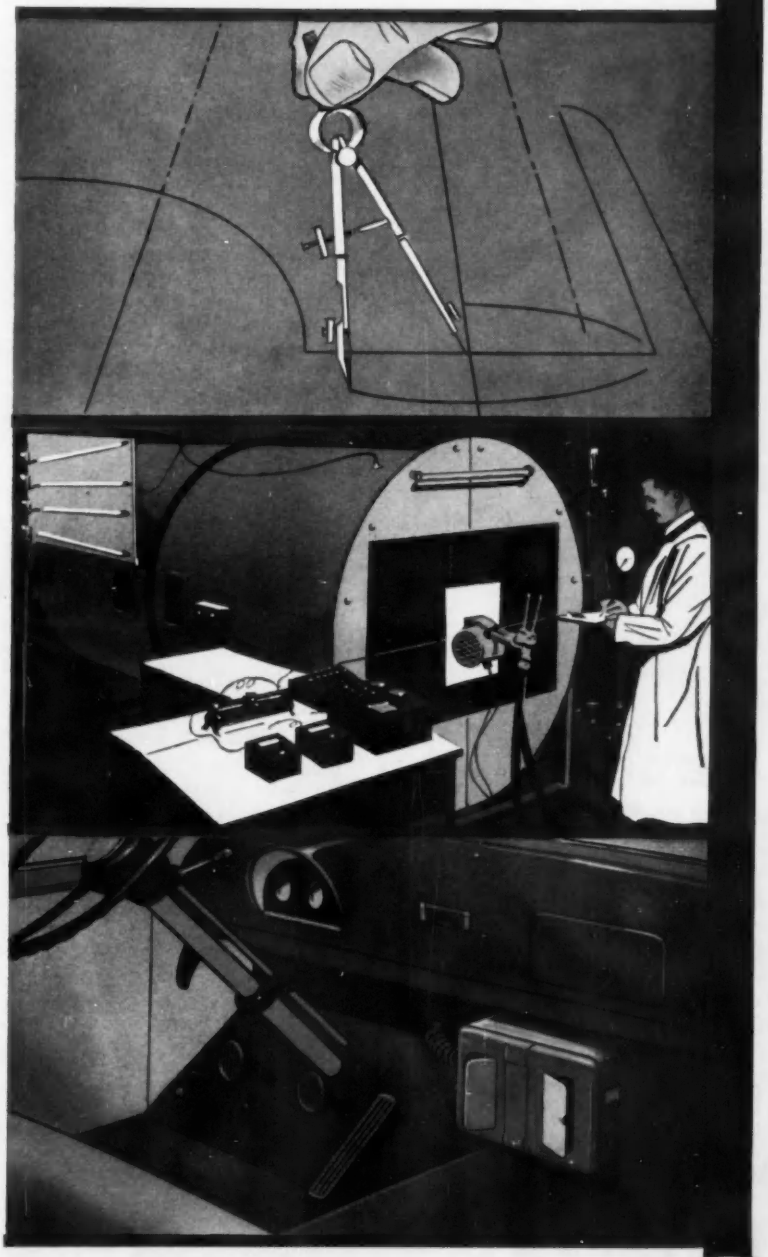
It is available in domestic models with either the Pratt & Whitney Aircraft JT (J-57) or JT4 (J-75) turbojet engines, and in extended range models with the larger power plants. Both models are also being offered with the Rolls Royce Conway by-pass engine.

The airplane's new dimensions will permit carrying 20,000 lb more fuel and provide space for up to 19 passengers in tourist interiors. The standard first class DC-8 cabin will contain from 118 to 122 seats.

Ten major airlines have already placed orders with Douglas Aircraft, for a total of 107 DC-8's.

(*Turn to page* 534, *please*)

Protect your truck's good name with a heater designed for trucks



Do the heaters you install in your trucks measure up to the high quality you build into those trucks? If they're Evans heaters you can be sure they match your trucks in quality, performance and long life. ***Here's why . . .***

Custom-designed by heater engineers

Evans original-equipment heaters are designed into your trucks as integral parts—to save you installation time and cost, to blend into design and space allowances of your trucks, and to provide full-balanced comfort, ventilation and defrosting for any kind of weather. Evans truck heating engineers work closely with your engineers. And the cost is less than you'd think for a genuine, custom-designed truck heater!

Rigidly tested in Evans' modern laboratory

Evans has one of the most extensive, most complete testing laboratories of any independent truck heater manufacturer. Each custom-designed heater and its components must pass all of Evans' rigid specifications with flying colors before being released for manufacture. And Evans backs its testing policy to the hilt with a parts "repair or replace" warranty on every heater, good for one year or 50,000 miles, whichever occurs first!

Tailor-built for your specific truck models

Evans engineers make sure that the heater custom-built for each of your specific truck models is not a "tacked-on" or "bolt-it-here-maybe" type, but an actual integrated unit built compactly and neatly into the truck. That's why Evans heaters, complete with *your own nameplate*, look like the quality products of your own factory!

Free Consulting Service and Heater Catalog! At no cost to you, one of our engineers will call to discuss your heater problems for any truck model, present or future. And write now for your free Evans heater catalog! Address: Evans Products Company, Dept. P-3, Plymouth, Mich.

REGIONAL REPRESENTATIVES: Cleveland, Frank A. Chase • Chicago, R. A. Lennox Co., Inc. Detroit, Chas. F. Murray Sales Co. • Allentown, Pa., P. R. Weidner.

EVANS PRODUCTS COMPANY
also produces: railroad loading equipment; bicycles and velocipedes; Evaneer fir plywood; and Evanite battery separators.

New Production EQUIPMENT

(*Continued from page* 370)

Self-Checking Monitor

TESTED on fire detection systems, machine safety controls, furnace flame monitors, photocell intrusion alarms, and liquid-level controls, a new monitoring technique, which checks itself by a unique pulsation method, has been developed. The method requires few additional components to change conventional static systems to the self-checking design. It is said to be sufficiently basic to be used with electronic, electrical, mechanical, pneumatic, hydraulic, and nuclear systems. Fields of application include industrial heating control, aircraft and safety systems, process control instrumentation, and atomic energy protective systems.

Equipment protective devices and system monitors incorporating this method check themselves by periodically simulating the dangerous condition they are designed to detect. The simulated unsafe condition is introduced into the monitor, resulting in a continual safe - unsafe - safe - unsafe oscillation which holds the alarm off. Failure of the safe condition being sensed, or of the monitoring system itself, halts the required safe-unsafe oscillation and sounds the alarm or initiates corrective action.

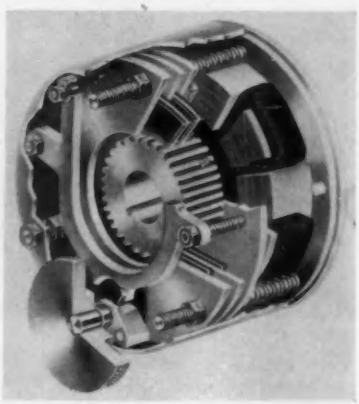
Examples of this technique are: A photocell circuit designed to detect the absence of light is tested by periodically interrupting the light beam. A temperature monitoring system is tested by pulsing a heat source in the vicinity of the temperature detector. A nuclear radiation monitor can likewise be tested by periodically exposing a radioactive source near the sensing element. The operability of a float-type liquid-level monitor can be proved by sinking the float every few seconds with a solenoid-actuated plunger.

The safe-unsafe oscillation of the system may be caused by a free-running perturbation device at the monitor input, or by the use of feedback to produce a relaxation oscillation within the monitoring system. The period of oscillation can be adjusted to meet the requirements of the particular control system, and may range from hours to microseconds. *Scully Signal Co.*

Circle 50 on postcard for more data

Electric Brake

DESIGNATED series E, a new electric brake is said to offer greater freedom from adjustments and maintenance. The device features a magnet with a circumferentially wound core and armature which the manufacturer claims reduces power losses



Pictorial view of Star-Kimble electromagnetic brake, available separately or in brakemotor combinations.

(*Turn to page* 506, *please*)



We're Proud of Our "1133"

FASCO

AUTOMATIC RESET MOTOR PROTECTOR

. . . NEW . . . but *proved* for positive protection against overloads and short circuits in low-voltage electrical equipment!

Yes, Fasco's new "1133" is now accepted as a standard safeguard for motors used in such applications as actuating seats, window-lifts and windshield wipers. Leaders in the automotive field regard its unique ability to protect low-voltage electrical equipment . . . and its dependability . . . as proof that it pays to

CONSULT FASCO *. . . FIRST!*

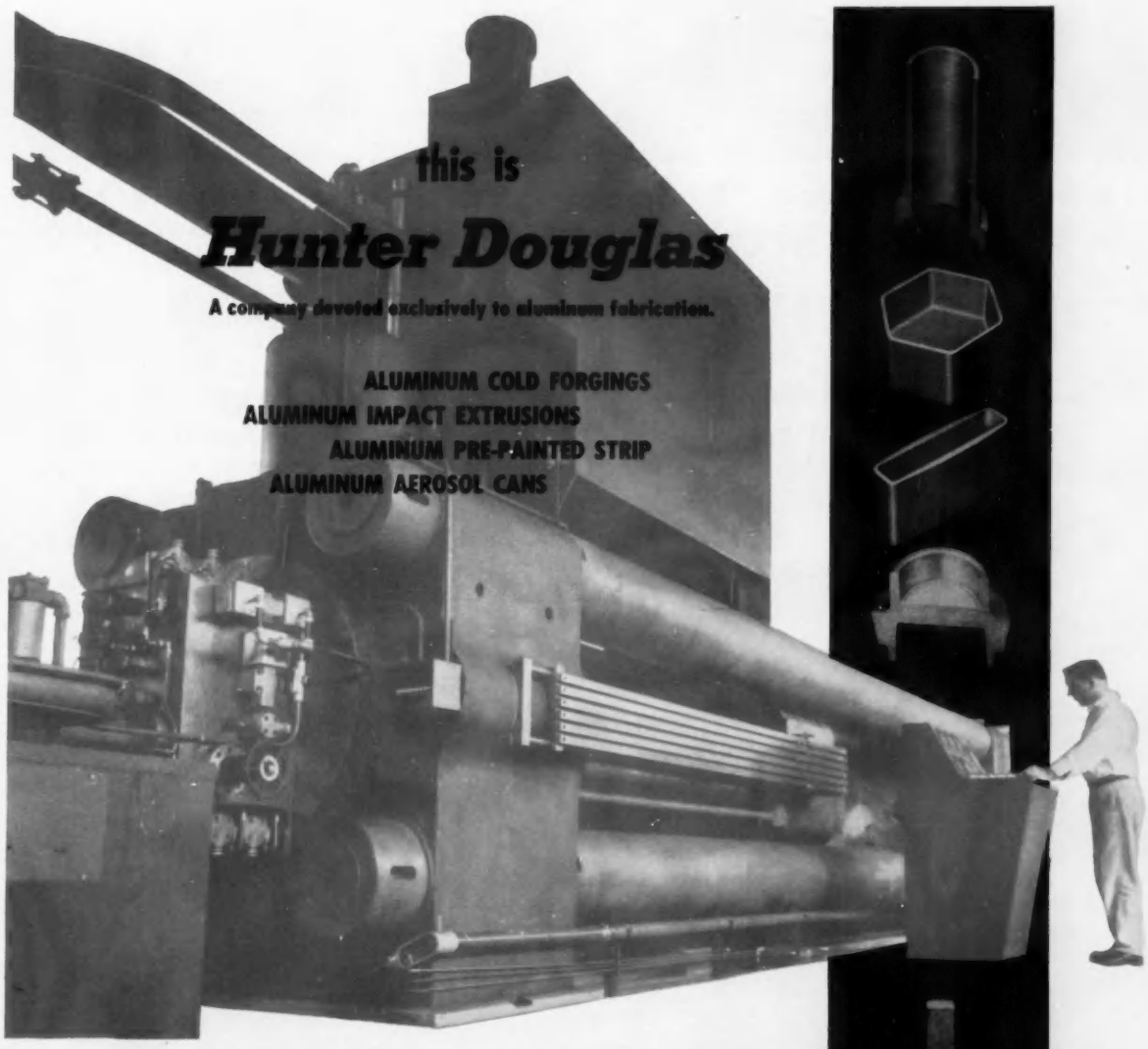
AUTOMOTIVE DIVISION

FASCO

INDUSTRIES, INC.

ROCHESTER 2, NEW YORK

DETROIT OFFICE—12737 PURITAN—PHONE: UN 17476



The name and reputation of Hunter Douglas stems from many activities related to aluminum fabrication. Cold forging of aluminum and its alloys is an important contribution. Advanced cold forging techniques, coupled with constantly growing facilities, now place Hunter Douglas among the world's leading suppliers of aluminum cold forgings and impact extrusions.

Unusual integration of plant facilities from raw material to finished product supply strong economic advantages for using this comparatively new aluminum cold forging process. Many "firsts" in solving complex tooling problems at Hunter Douglas have tremendously increased the scope of cold forging... in variety of part geometry and in component size.

Hunter Douglas engineering and fabrication resources can work to your advantage when parts are required in mass quantities. Our sales engineering department will welcome the opportunity to assist in developing your aluminum cold forging applications.

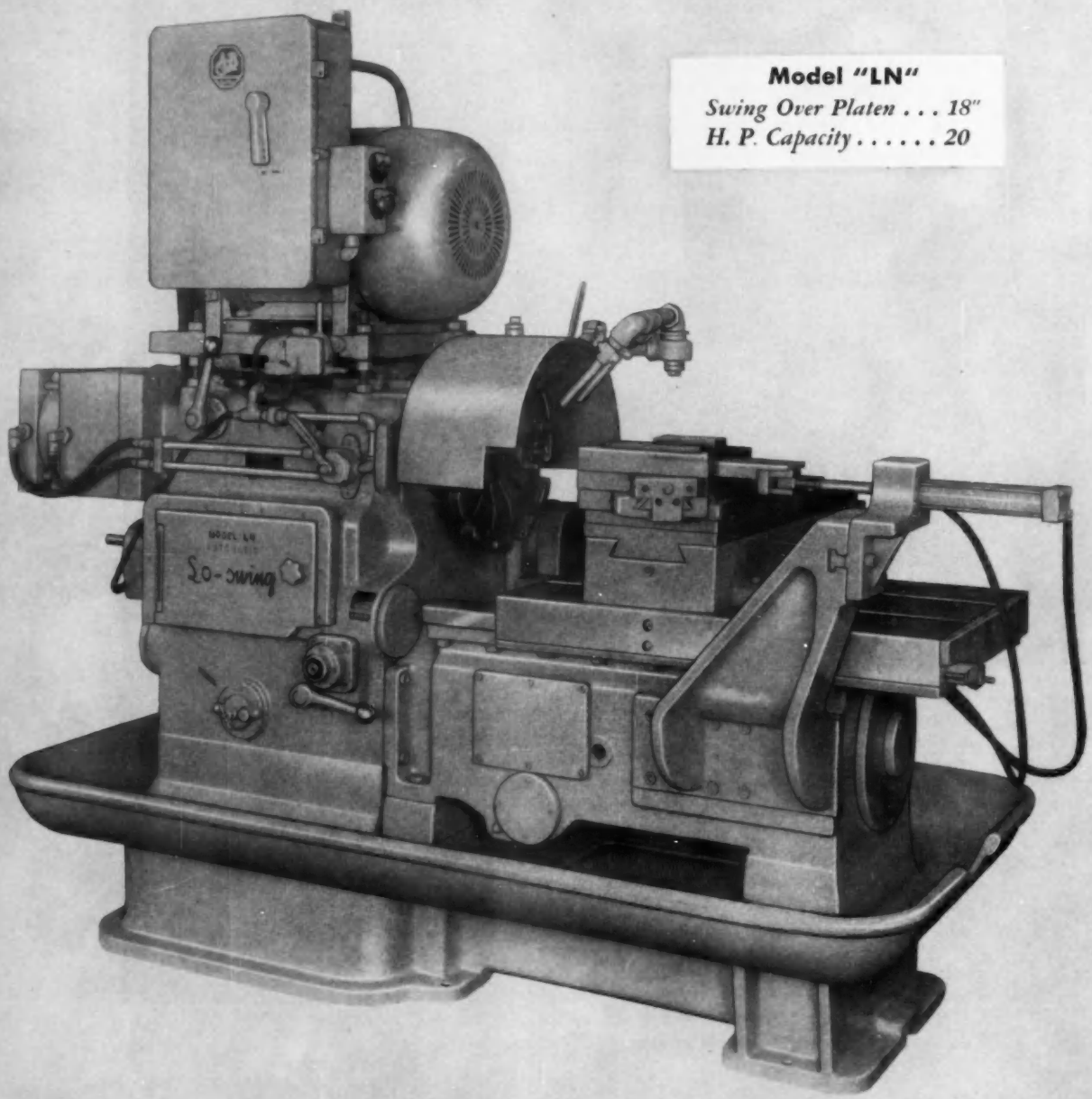
Detroit Sales Engineering Office:
16722 E. Warren Ave., TUxedo 2-0232

Hunter Douglas Aluminum Corporation

HUNTER DOUGLAS ALUMINUM CORPORATION • DEPT. AI-3, RIVERSIDE, CALIFORNIA • TELEPHONE OVerland 3-3030

MACHINE OF

PREPARED BY THE SENECA FALLS MACHINE CO. "THE *Lo-swing* PEOPLE" SENECA FALLS, NEW YORK



Model "LN"
Swing Over Platen . . . 18"
H. P. Capacity 20

SENECA FALLS PLATEN-TYPE,

THE MONTH

NEW PLATEN-TYPE AUTOMATIC LATHES CUT BORING, FACING AND TURNING COSTS

The NEW Seneca Falls Platen-Type Automatic Lathes have been designed principally as chucking machines adaptable to a wide variety of work requiring large swing capacity, high spindle speeds, multiple tooling and fast cycling operation.

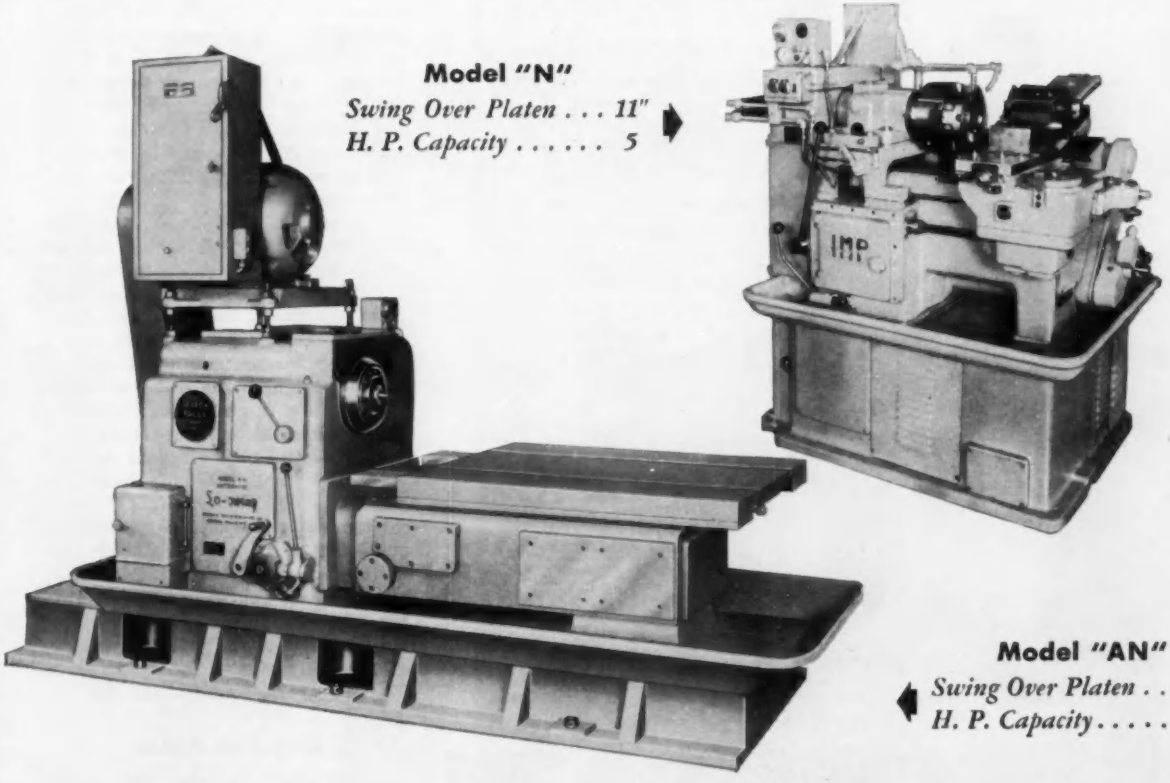
The platens have cam operated longitudinal and cross feeds and may be equipped with angular feeding slides and other special attachments suitable for customer's work.

All three types of machines may be equipped with Seneca Falls Automatic Loading and Transfer Equipment which provides means to extend automaticity to individual machines or through a series of successive, though dissimilar, operations to combine work loading, machining and work transfer into one single, automatically controlled phase of production flow.

Seneca Falls production-minded engineers are at your disposal to solve your chucking problems.

Write for Bulletin N-D

Model "N"
Swing Over Platen . . . 11"
H. P. Capacity 5

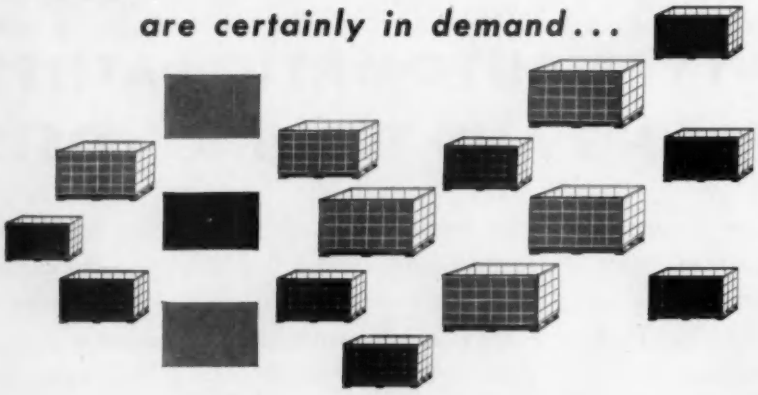


Model "AN"
Swing Over Platen . . . 24"
H. P. Capacity 40

CAM-OPERATED AUTOMATIC LATHES

our Wirebound Pallet Boxes

are certainly in demand...



Ever since we introduced the SUPERSTRONG Wirebound Pallet Box we have been receiving a heavy volume of orders—and of favorable comments. Seldom has a new product been greeted with such enthusiasm.

The combination of light weight with strength . . . the appreciable reduction in materials handling costs—provide the answer. If you do not know all of the advantages of SUPERSTRONG Wirebound Pallet Boxes, please let us tell you about them.



Wirebound Boxes and Crates • Wooden Boxes and Crates
Corrugated Fibre Boxes • Beverage Cases • Starch Trays • Pallets

RHR

RATHBORNE, HAIR and RIDGWAY BOX CO.

1440 WEST 21st PLACE, CHICAGO 8, ILLINOIS

New Production EQUIPMENT

(*Continued from page* 502)

by 80 per cent compared with the usual E magnets employed. Preformed coils inserted in slots milled in the core are the equivalent of six E magnets. The brake may be connected to either two or three-phase motors with equal facility.

The high pull-in force at large air gaps, together with the fact that comparatively low rate springs are employed, minimizes danger of magnets burning out with heavy lining wear.

Manual release in the series E is located off-center to permit two-end shaft mounting. By an arrangement of two release pins which are a part of the manual release, a limit stop for the magnet armature is provided; the pins keep the armature from being displaced so far that the magnet cannot pick it up. The manual release is optional.

Studs projecting from the mounting flange, which support the entire weight of both magnet and brake mechanism, are piloted through the cast aluminum cover which is friction-fitted to the mounting flange and thereby helps to absorb and distribute the forces of shock loading. This makes possible the use of three studs instead of four, simplifying air gap adjustment.

The manufacturer also points out that by welding the magnet to the mounting plate, the studs are relieved of the weight of this heavy component. In addition, the inboard location of the magnet leaves the brake easily accessible for air gap adjustments, replacement of brake disks or other maintenance. High-friction brake linings are bonded to both sides of aluminum disks spline-mounted on the drive shaft. When the linings wear out, the entire disk is replaced. In tests during which the unit was subjected to half a million start-stop cycles at the rate of ten cycles per minute, the change in air gap was only 0.0015 in. per friction surface. *Star-Kimble Motor Div., Miehle Printing Press & Mfg. Co.*

Circle 51 on postcard for more data

One-Ton Press

A NEW bench-mounted high-speed air press, designed for spring manufacturing including looping,

(*Turn to page* 509, *please*)

NEW



No. 3-36 . . . 36" table travel . . . 84" x 16" table . . . full automatic hydraulic feed.

No. 3-36

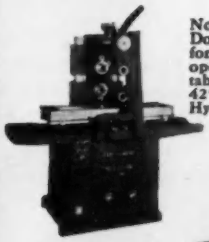
HYDRAULIC MILLING MACHINE

Now—the family of Kent-Owens Milling Machines has expanded to give you the same unexcelled milling accuracy, speed and dependability for *larger size work!*

Proudly we present the No. 3-36 Hydraulic Milling Machine . . . the new "big brother" in the line of popular Kent-Owens Millers. Each Kent-Owens machine is ruggedly designed with advanced features throughout for greater dependability and accuracy to maintain tough production schedules. Write for bulletin 955 on wide range of hydraulic and hand-operated machines. Also, let Kent-Owens design and build your tooling and special machines.

Kent-Owens Machine Co., Toledo, O.

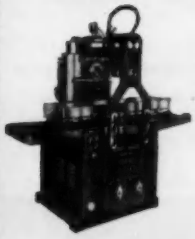
Simple . . . Rugged . . . Efficient



No. 2-20DS . . . Double Spindle for two milling operations . . . 20" table travel . . . 42" x 12" table. Hydraulic feed.



No. 1-14 . . . 14" table travel . . . 32" x 9" table . . . hydraulic table feed . . . full automatic cycle.



No. 2-20 . . . 20" table travel . . . 42" x 12" table . . . full automatic hydraulic feed.



No. 1-M . . . Hand feed to table and head . . . 25" x 9" table . . . 12" table travel . . . head counter-balance is adjustable.

Call on

KENT-OWENS

for MILLING MACHINES

KENT-OWENS REPRESENTATIVES

BOSTON
General Machinery Corp.

BUFFALO
Standard Machinery Co.

CHICAGO
Penn States Machy Company

DALLAS
Hoover Machine Tool Co.

DAYTON
C. H. Gessner Machy Co.

DETROIT
A. C. Horn Machinery Co.

FT. WAYNE
Ossit Machinery Co.

GRAND RAPIDS
Joseph Marsden

HAMILTON, ONT.
E. F. Barker Machy Company

HARTFORD
Hartington Machinery, Inc.

HOUSTON
Oliver F. Van Horn Co., Inc.

INDIANAPOLIS
Ossit Machinery Co.

KANSAS CITY
Richman Machinery Co.

LOS ANGELES
Machinery Sales Co.

MILWAUKEE
Penn States Machy Company

MINNEAPOLIS
The Scanlan Company

MOLINE
John J. Nesbitt Co.

MONTREAL
E. F. Barker Machy Co.

NEW ORLEANS
Oliver F. Van Horn Co., Inc.

NEW YORK
Harrington & Richardson Corporation

PHILADELPHIA
Cohn Machinery Company

PITTSBURGH
Penn States Machy Company

ROCHESTER
D. W. Schlosser Machinery Co.

SAN FRANCISCO
G. S. Ballard Machinery Co.

ST. LOUIS
Wm. Schaer Company

SYRACUSE
E. F. Owens Machy Company

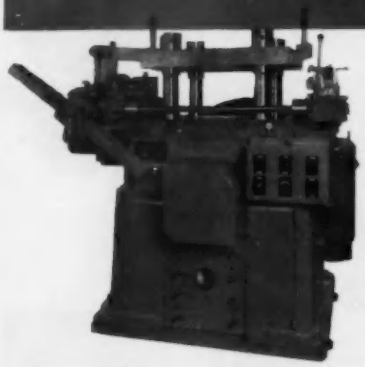
TORONTO, ONT.
E. F. Barker Machy Company

WINDSOR, ONT.
E. F. Barker Machy Company

here's production you can plan on with

BRANDES

AUTOMATIC PRESSES



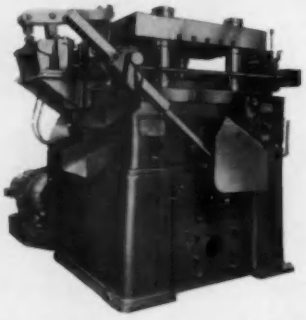
BRANDES 90 TON PRESS

All Brandes Presses are built for ease of operation, with friction clutch and automatic lubrication standard equipment. The vertical bolt lines hold the vertical "V" ways which guide the lower slide. The scrap cutters have heavy square gibbing with exceptionally long ways. The position of the scrap cutter and blades is adjustable.



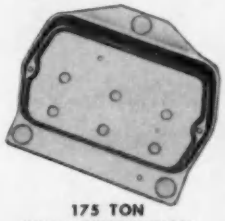
90 TON PRESS PRODUCTION

—Cover 1⅛" deep—.035" C.R.S. at 75 strokes per minute.



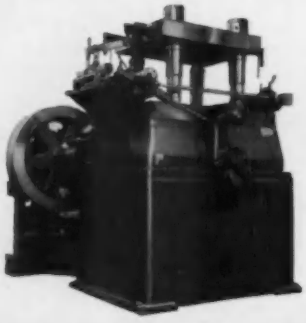
BRANDES 175 TON WIDE BED PRESS

Like all Brandes Presses, the 175 ton features larger die areas—longer die life—patented multiple "V" guides assuring perfect die alignment—low center of gravity—elimination of special pits. Die clearance on the 175 is 28" F to B and 60" R to L.



175 TON PRESS PRODUCTION

—Cover .050" C.R.S.—¾" deep at 75 strokes per minute.



BRANDES 550 TON PRESS

Note the sturdy construction of this press which incorporates all the exclusive performance features of the smaller units described above. The quick feed eccentric is standard on this size machine as is the design arrangement of single back-gear. This press accommodates a die up to 10 ft. in length. Special width and length built on request.



550 TON PRESS PRODUCTION

— Base ⅞" deep — .149" H.R.S.— draw and coin — 30 strokes per minute.



WRITE FOR COMPLETE FOLDER

THE BRANDES PRESS CO.

6408 Euclid Avenue • Cleveland 3, Ohio

BUILDERS OF FINE PRESSES FROM 30 TO 4,000 TON

New Production EQUIPMENT

(*Continued from page* 506)

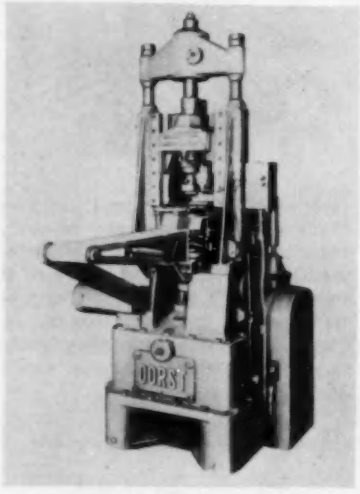
bending, forming, coiling and pressing, can also be used for light punching, trimming, cutting, crimping and other secondary operations. Over 1800 loops and 3000 punches per hour have been made.

The press comes with bolster plate, foot switch, solenoid valves, electrical fittings and air line connections. An adjustable screw stop controls the stroke of the ram up to 2 in. and ram speed is controlled by a valve on the air line. Size of frame is 8 in. wide, 11 in. deep and 22 in. high overall. *The Carlson Co.*

Circle 52 on postcard for more data

Powdered Metal Press

THE Dorst automatic powdered metal press is now available in a new 110-ton model. It is capable of



Dorst 110-ton model automatic powdered metal press

producing 4 to 20 pieces per minute, depending upon the intricacy of the part.

Features include: Adjustment controls with micrometers for the prepress movements; automatic fill, press and ejection of the material; variable speed drive; capacity up to 20 strokes per minute; and pick-up mechanism and conveyor belt to remove pressed parts automatically. *Arnhold Ceramics, Inc.*

Circle 53 on postcard for more data

(*Turn to page* 521, *please*)

MACHINABILITY INDEX 80-90*



PEARLITIC MALLEABLE CASTINGS

*B1112 STEEL = 100

Low machinability index of 80-90 (B1112 steel = 100) is probably reason enough to warrant serious consideration for your product.

But pearlitic malleable castings—from National—don't stop there. They have great ultimate strength . . . resist wear under heavy loads at high speeds . . . make excellent non-seizing bearings . . . can be air or liquid-quenched . . . can be smooth-finished.

Don't overlook the advantages of pearlitic malleable. For pearlitic malleable castings—from National—can often reduce manufacturing costs, weight and assembly time . . . can increase the sales potential of your product.

AA-1906

NATIONAL MALLEABLE AND STEEL CASTINGS COMPANY

Cleveland 6, Ohio

The Nation's largest independent producer of malleable and pearlitic malleable

NEW PRODUCTS

(*Continued from page* 376)

Piston Alloy

Designated as F132, a new aluminum casting alloy which is relatively unaffected by nickel shortages has been developed primarily to replace the older automotive piston alloy, D132. Since an emergency would quickly curtail the use of nickel, F132 offers a more dependable material. The nickel content of D132 alloy has a range from 0.5 to 1.5 pct. Alloy F132 has a 0.5 pct nickel maximum.

Alcoa foundries will supply F132 alloy pistons in the T5 temper, with the same heat treatment now being used for D132-T5 alloy. Mechanical property test data indicate the room temperature and elevated temperature properties of F132-T5 alloy are practically the same as those of D132-T5 alloy. Minimum and typical mechanical properties for separately permanent mold cast F132-T5 alloy test specimens are given below: *Minimum*—Tensile strength, psi, 31,000; elongation, pct in 2 in., not required; Bh (range), 500 Kg load, 10-mm Ball, 90-120. *Typical*—Tensile strength, psi, 36,000; yield strength, psi, 28,000; elongation, pct in 2 in., 1.0; Bh, 500 Kg load, 10-mm Ball, 105.

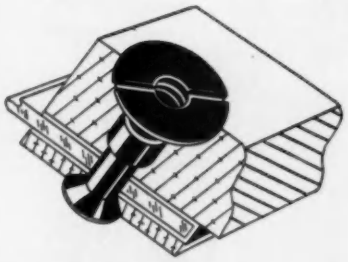
Growth and expansion characteristics of the two alloys show no significant difference. There has been no apparent dissimilarity noted in the casting characteristics of the two alloys. Such factors as surface quality and internal soundness of pistons will remain unchanged. The machinability of the two alloys is likewise said to be comparable. *Aluminum Co. of America.*

Circle 83 on postcard for more data



Self-Locking Nut

An all-metal 100 deg flush headed self-locking nut, for temperatures from —65 deg to 1200 deg F, incorporates a locking feature which eliminates all non-metallic inserts and is



said to offer added load carrying characteristics. There are no sharp edges in the locking area. Designated the SL52 series, the nut is offered in sizes from 8-32 to ⅝-24, and may be manufactured in larger sizes on request. It is made from alloy steels, carbon steels, and stainless steels. *Shur-Lok Corp.*

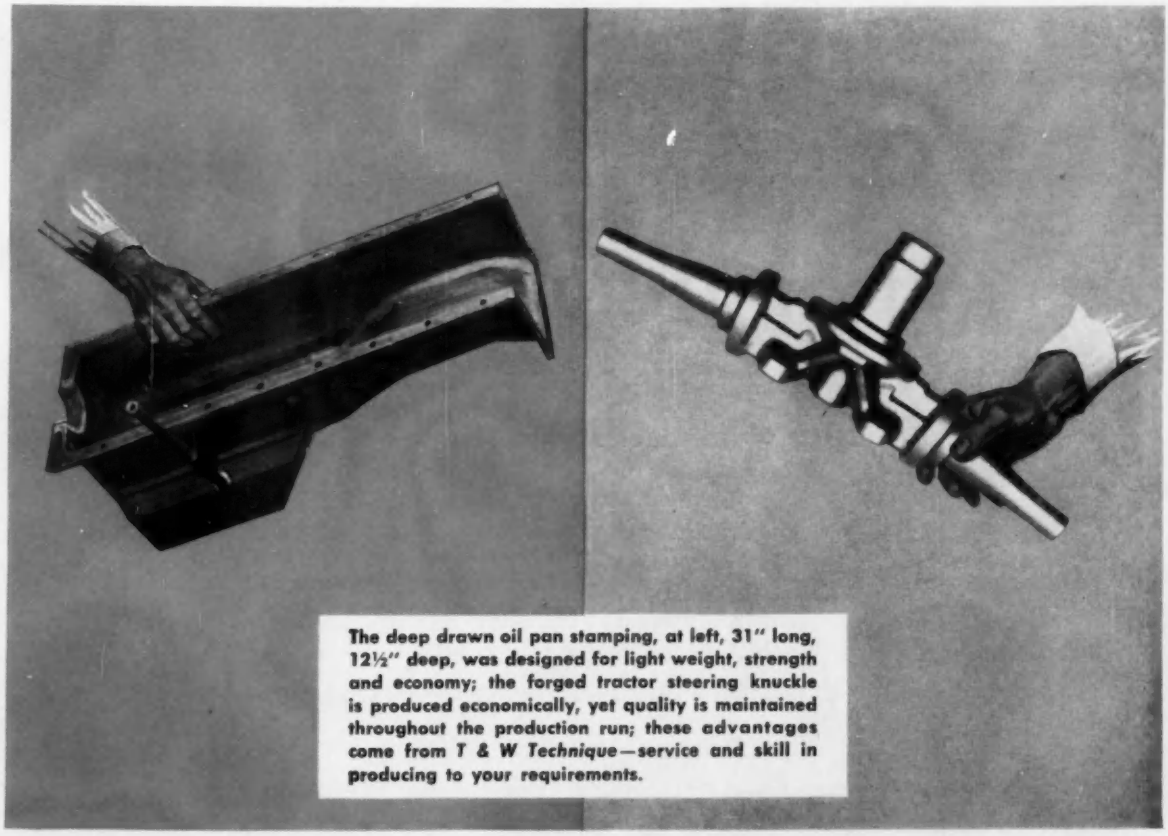
Circle 84 on postcard for more data

Photosensitive Plates

Heavy gage, photosensitive, anodized aluminum plates, with thicknesses of 0.064 in. have been introduced. Heretofore they have been available in thicknesses limited to 0.020 in. These plates have been utilized for producing photographically on metal, wiring diagrams, dial faces, instruction panels, and the like. Because the legend is imbedded in the anodized layer of the aluminum, resistance to abrasion, acids, alkalis, and temperatures up to 1000F are said to apply.

The development of heavier gage

(*Turn to page* 514, *please*)



The deep drawn oil pan stamping, at left, 31" long, 12½" deep, was designed for light weight, strength and economy; the forged tractor steering knuckle is produced economically, yet quality is maintained throughout the production run; these advantages come from *T & W Technique*—service and skill in producing to your requirements.

For Stampings, or Forgings, T&W TECHNIQUE produces savings

Many who buy stampings, or forgings, have discovered how *T & W Technique* helps them save time, avoid trouble, save dollars. *T & W Technique* is the special skill and service T & W offers you. It is effective design and engineering service, plus skill which permits making of hard-to-produce parts without delay, plus quality control, and capacity to deliver on schedule. For both stampings and forgings, *T & W Technique*, the know-how from over 50 years of experience, delivers you parts that cost you less at the point of assembly.

STAMPINGS
T&W
FORGINGS

TRANSUE & WILLIAMS

Over 50 years of experience

Sales Offices:

NEW YORK • PHILADELPHIA • CHICAGO • INDIANAPOLIS
DETROIT • CLEVELAND • HOUSTON • LOS ANGELES

TO: Transue and Williams, Alliance, Ohio

Please let me know what "T & W Technique" can do for us. We are interested in

☐ Forgings ☐ Stampings

Name _____

Company _____

Street _____

City _____ Zone ____ State _____

1306

T & W DEEP DRAWN STAMPINGS AND FORGINGS USUALLY COST LESS AT THE POINT OF ASSEMBLY

CINCINNATI RIGID SHAPERS

New—modern—these Rigid Shapers offer faster, more convenient controls, greater accuracy, greater dependability. The New nodular iron ram, trunnion and vise, and wide heavily ribbed column give a new rigidity—increase accuracy in cutting.

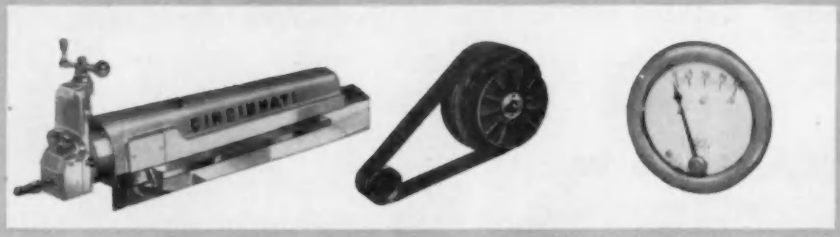
The New slot-free ram also eliminates the manual clamping of ram adjustment—a time saving feature.

A speedy, dependable electro-magnetic brake and clutch insure a faster performance.

50 P.S.I. pressure lubrication, exclusive on Cincinnati Shapers, is a real insurance against wear and a guarantee of long trouble-free performance.

Write for the circular on the New Rigid Shapers.

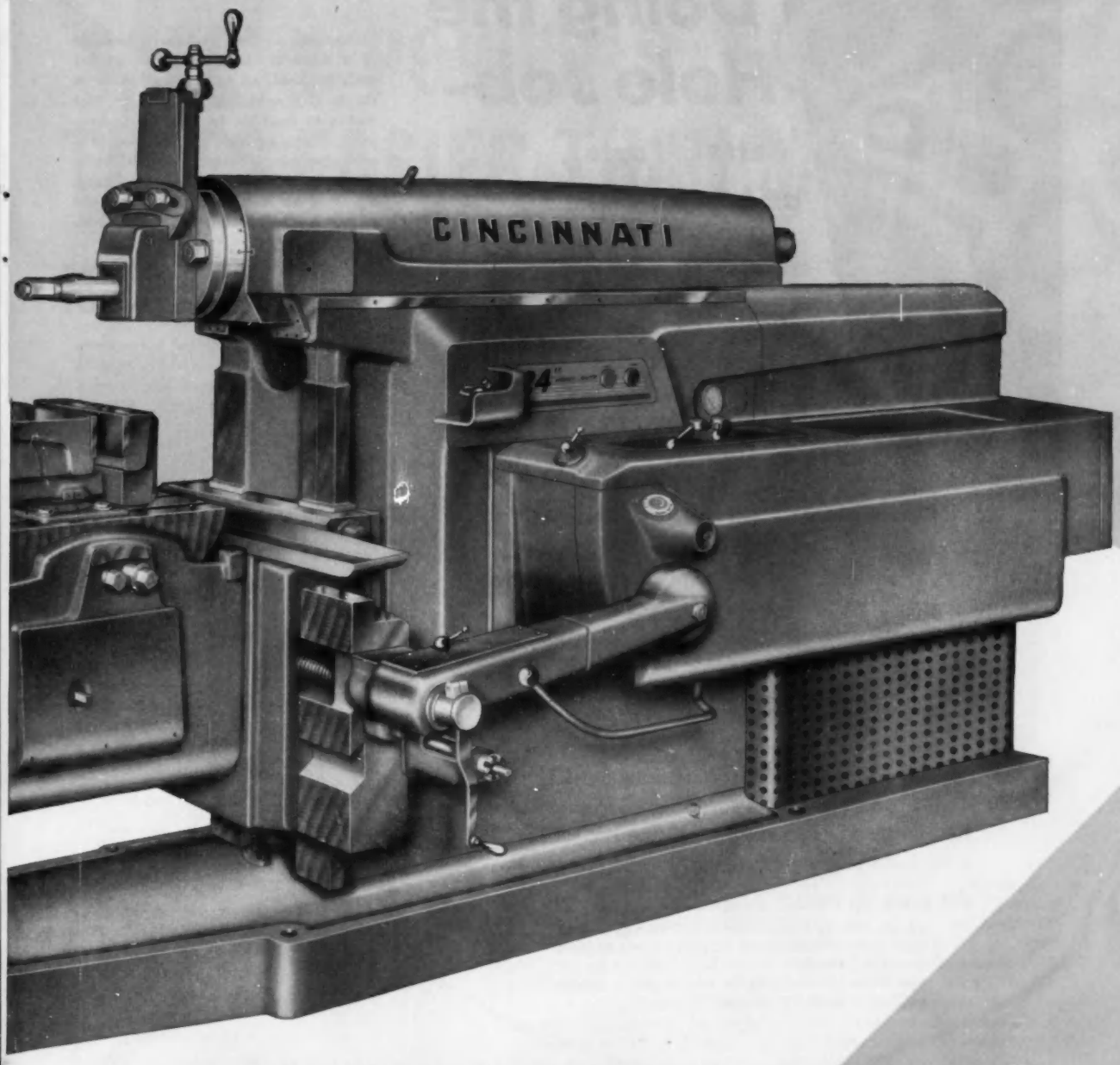




Nodular iron, slot-free ram

Electro-magnetic Clutch and Brake

The only shaper with 50 P.S.I. lubrication



Cincinnati Shapers, Shears and Press Brakes carry a 5 year guarantee on workmanship and material—write for details.

THE CINCINNATI SHAPER CO.

CINCINNATI 25, OHIO, U.S.A. SHAPERS • SHEARS • BRAKES

CINCINNATI



Doing the Hole Job-

Better, Faster, at Lower Cost

BESLY TAPS

with UNSURPASSED ACCURACY at all vital points



Tru-Square DRIVER	Mirror-Finish FLUTES	Solid Ground THREAD FORM	Accurate RAKE ANGLE	Microcentric CHAMFER

You get better threaded parts, longer tap life and lower tapping costs when you use Besly Taps in your shop. The correct tap design plus Besly's unsurpassed accuracy, make the difference, both in production quality and costs.

PUT BESLY ON TRIAL . . .

ask your Besly Distributor to put the right Besly Tap on your toughest job. There's no cost or obligation to actually see what Besly taps can do for you. When you call him, be sure to get the details on Besly's Super-Service on "specials".

BESLY

BESLY-WELLES CORPORATION

Established as Charles H. Besly & Co. in 1875

132 Dearborn Avenue • Beloit, Wisconsin



NEW PRODUCTS

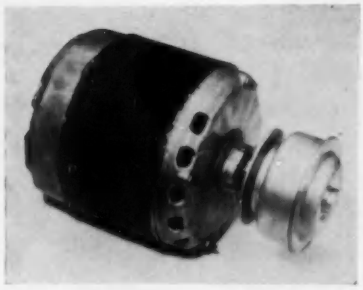
(*Continued from page* 510)

plates was deemed necessary because of a demand for heavier plates for such applications as instrument panel faces. It is said that the new product makes it possible to produce instrument panels of high permanence in a photographic darkroom, and of sufficient rigidity that meters, rheostats, etc., can be mounted directly on the photosensitive aluminum. *Metalphoto Corp.*

Circle 85 on postcard for more data

Motor Drive

For use with fractional horsepower motors, a new fluid drive is said to provide 100 pct efficiency and to operate with the softness of a fluid clutch



without slippage while under full load. Protection against shock overloading is featured. The device is encased in a permanently-sealed housing, eliminating the need for routine servicing. *Will-O-Hill Industries, Inc.*

Circle 86 on postcard for more data

Ceramic Magnets

Low cost, ceramic permanent magnet material, said to combine adequate energy product with high coercive force, low residual induction, virtually 100 per cent electrical resistivity and exceptional resistance to demagnetization, has been introduced.

Known as Ceramagnet permanent magnets, the new units are claimed to retain their energy even when used without "keepers" or under other closed-circuit conditions, and in the presence of strong opposing fields. In addition, they are practically non-conductors. Electrical resistivity is such as to make them suited for high-frequency and high-voltage circuits. They can be placed in the direct path of electro-magnetic energy to rotate the polarization plane, to focus ca-

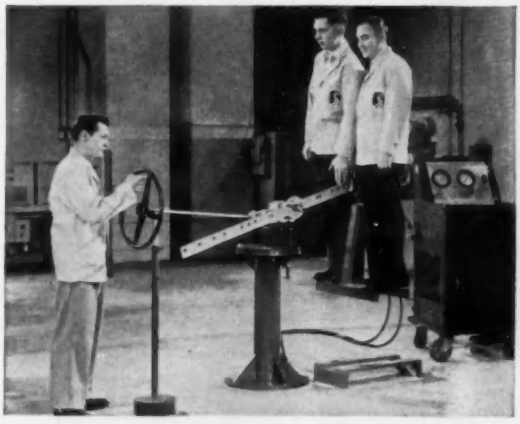
(*Turn to page* 516, *please*)

DRAMATIC LAB TEST PROVES SAFETY POWER STEERING 5 TIMES EASIER THAN MANUAL!

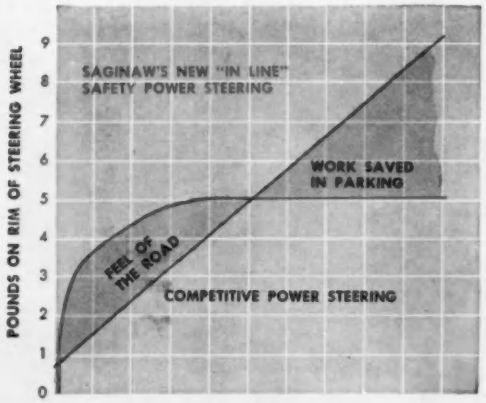
EFFORT REQUIRED TO LIFT TWO MEN—SIMILAR TO EFFORT OF TURNING WHEELS AT STANDSTILL—CUT FROM 25 TO 5 POUNDS



Here's an unusual and convincing demonstration recently made in Saginaw's Research Laboratory. A standard *Safety* Power Steering gear is linked to a platform carrying two hefty men. With the power OFF, the engineer must strain with both hands —exert 25 pounds' pull on wheel rim to lift the men.



Now the power is switched ON, and the man at the wheel can lift the two men on the platform with *only 5 pounds' pull*—far, far easier than when the gear is operated manually! In fact, he does it with one finger. You can turn the wheel of a car at a standstill just as easily with *Safety* Power Steering!



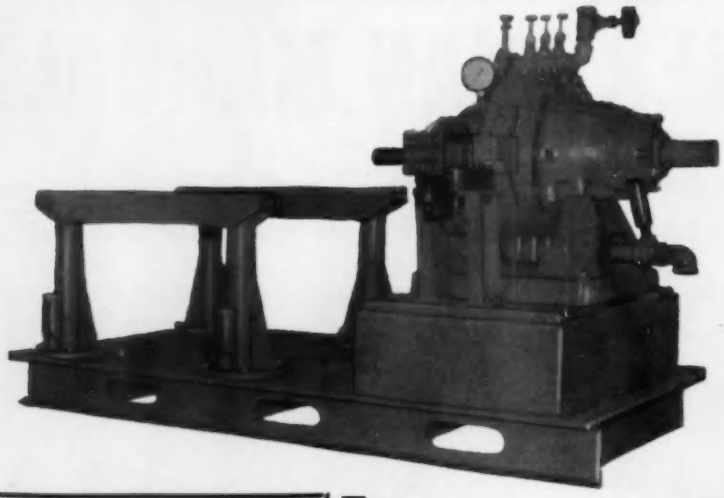
WORK REQUIRED AT FRONT WHEELS

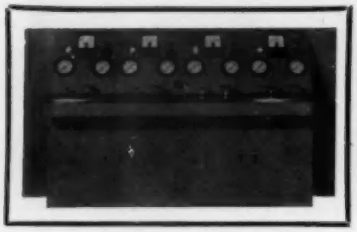
The secret of this amazing parking ease—almost *twice as easy* as that of any other power steering—is Saginaw's exclusive new "parking valve". This extra valve, built into the center of the main hydraulic control valve, automatically limits reaction pressure to 250 psi. This reduces the amount of manual effort needed to turn the wheels, so it *never exceeds 5 pounds' pull on the steering wheel.* (See chart). On the highway, when the car is easier to steer, the "parking valve" does not function. This permits normal hydraulic reaction pressure, assuring the familiar "*feel of the road*" and steering stability which have made *Safety* Power Steering by far the most popular type on the market today. Saginaw Steering Gear Division of General Motors, Saginaw, Michigan.

NEW Safety POWER STEERING by Saginaw

WORLD'S LARGEST BUILDER OF POWER AND MANUAL STEERING SYSTEMS

HI-EFF TAYLOR DYNAMOMETERS





For Production and Laboratory Testing

Widely used by manufacturers of

• TURBINES • DIESEL ENGINES
• GASOLINE ENGINES • PUMPS • BELTS
• SPARK PLUGS • PISTON RINGS
• SUPERCHARGERS • ELECTRIC MOTORS
• TRANSMISSIONS and DIFFERENTIALS

Hydraulic Dynamometers—Write for Bulletin 761

TAYLOR DYNAMOMETER & MACHINE CO.

DEPT. AI • 6411 RIVER PARKWAY • MILWAUKEE 13, WISCONSIN

MANUFACTURERS OF DYNAMOMETERS • BALANCING MACHINES • DRILLING MACHINES

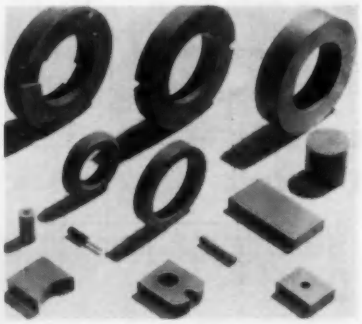
International Division—Dummann World Trade Co., Milwaukee 6, Wis., U. S. A.

NEW PRODUCTS

(*Continued from page* 514)

thode ray tube beams or for similar purposes. Temperature characteristics are linear, including retrace, to 400 C.

Made of non-critical, inexpensive barium and iron oxides, the magnets



are classified among the hard magnetic materials. Units are available in a variety of sizes and shapes. They are machineable by wet grinding and may be machined after magnetizing. Although they can be magnetized in any direction, highest energy product is obtained by magnetizing across thinner sections. *Electronic Components Div., Stackpole Carbon Co.*

Circle 87 on postcard for more data

Easily-Aimed Headlamp

A new type of automobile headlamp, the Vision-Aid with E-Z Aim platforms, is now in production. Three level aiming platforms, molded on the face of the lens, provide contact points for the new mechanical aimers, which adjust headlamps in broad daylight. Completely interchangeable with all sealed beam headlamps, it is being produced in 6 and 12-v models.

The unit continues to feature recent industry-developed improvements: a beam range of 80 additional feet and filament cap which reduces glare-back from fog, rain and snow. *Tung-Sol Electric, Inc.*

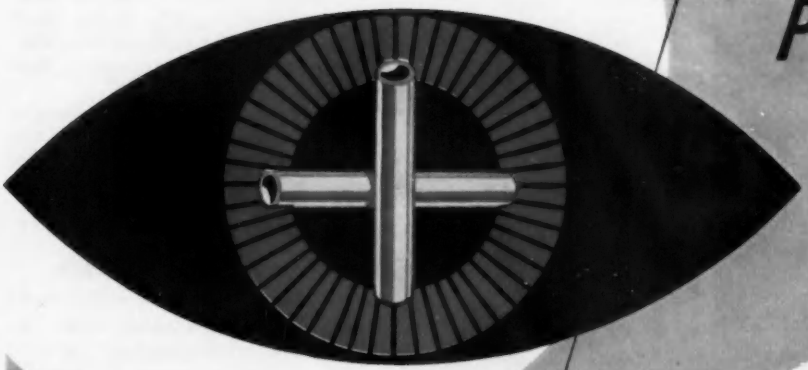
Circle 88 on postcard for more data

Hydraulic Power Unit

A complete and compact hydraulic power unit, with 6 or 12 v dc motor drive, pump, control valve and tank and designed for applications on mobile equipment such as snow plows, hoists, booms, tail gates, etc., is named the Lectro Lift. A rectangular housing of cast aluminum serves as the reservoir for 110 cu in. of oil. The

(*Turn to page* 518) *please*)

You can see the PLUS VALUES in Ostuco Performance!



1 ***You'll see SPECIAL QUALITY Tubing*** that lets you turn hidden costs into extra profits. Ostuco's lightweight strength values, more uniform tube walls and fine finish result in seamless and electric resistance welded steel tubing of unmatched quality.

2 ***You'll see DESIGN-ENGINEERING SERVICE*** go to work on your tubing problems. A wealth of design and production information is at your service. Ostuco's experience dates from the beginning of the seamless tube industry.

3 ***You'll see ON-TIME DELIVERY*** of tubing as promised! No costly delays that hold up your production. Ostuco has the reputation of making deliveries on schedule.

4 ***You'll see "SINGLE-SOURCE" SERVICE*** in action and you benefit through convenient, error-free handling of the entire order! Manufacturing and fabrication is under one roof at Ostuco—one order eliminates multiple shipments, saves time and handling costs.

Some good things our customers are saying about OSTUCO:

Agricultural Equipment:
"Your Mill is doing an excellent job with regard to maintaining delivery promises."

Hydraulic Equipment:
"We feel partial to you because of the excellent service."

Machine Tools:
"You are receiving 100% of the tubing we purchase and will continue to do so as long as you keep up the good quality and service."

Drilling Equipment:
"Your tubing is the best we've ever had because of its exceptional straightness and good workmanship."

Blue chip companies, the world over, look to Ostuco for practical solutions to their steel tubing problems. Why don't you ask one of our Tubing Engineers to show you how OSTUCO'S PERFORMANCE PLUS service turns drawing-board ideas into top quality parts faster . . . more dependably . . . with greater savings.

OSTUCO SHELBY, OHIO

OSTUCO TUBING

SEAMLESS AND ELECTRIC RESISTANCE
WELDED STEEL TUBING—Fabricating and Forging

OHIO SEAMLESS TUBE DIVISION
of Copperweld Steel Company • **SHELBY, OHIO**
Birthplace of the Seamless Steel Tube Industry in America

SALES OFFICES: BIRMINGHAM • CHARLOTTE • CHICAGO (Oak Park) CLEVELAND • DAYTON • DENVER • DETROIT (Ferndale) HOUSTON • LOS ANGELES (Beverly Hills) • MOLINE NEW YORK • NORTH KANSAS CITY • PHILADELPHIA PITTSBURGH • RICHMOND • ROCHESTER • ST. LOUIS ST. PAUL • SALT LAKE CITY • SEATTLE • TULSA • WICHITA

CANADA, RAILWAY & POWER ENGR. CORP., LTD.

EXPORT: COPPERWELD STEEL INTERNATIONAL COMPANY
117 Liberty Street, New York 6, New York

NEW PRODUCTS

(*Continued from page* 516)

electric motor is flange-mounted to one end of the housing and the pump control valve to the opposite end. All working parts are totally enclosed for protection from outside elements. Control is obtained by one lever which can also accommodate a clevis for remote control linkage. It has three operating positions—raise, lower and spring return to hold. Lowering control is through a throttling valve for varying the rate of return. The unit may be mounted vertically, with motor end up, or horizontally. *Wisconsin Hydraulics, Inc.*

Circle 89 on postcard for more data

Sound Damping Tape

A new pressure-sensitive tape has been developed primarily to reduce the sound level inside aircraft and designed for applications where a high ratio of noise reduction to unit weight is desired. Tape 435 is a laminate of two layers of aluminum foil coated with a specifically-compounded long-aging adhesive.

Physical features of the 12-mil tape include tensile strength of 50 psi of tape width; minimum adhesion of 50 oz/in. of tape width; weight of 0.112 lb/sq ft; and damping efficiency of 92.0 db/sec/lb/sq ft at 0 F or 45.5 db/sec/lb/sq ft at 70 F.

It is expected to find widespread vibration damping applications in the aircraft industry for covering fuselage sections. In addition, it may have application possibilities in the automotive industry and by various fabricators of light metals faced with overcoming noise and vibration in their finished product.

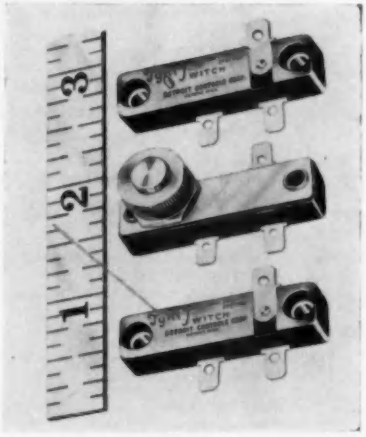
The tape is being made available on 60-yard rolls in widths from ¼- to 34-in. *Minnesota Mining and Manufacturing Co.*

Circle 90 on postcard for more data

Snap-Action Switch

The TyniSwitch now being offered is 1⅝-in. long, 9/32-in. thick, and 7/16-in. wide. Precision performance and outstanding contact life are said to be features of this switch.

Fully-enclosed and of simple design, it is extremely compact, as connecting



elements in the spring release mechanism are eliminated, and there is only one moving part. With only a single stamping being used, positive snap action is provided. Force and movement are held to close tolerances, and the patented blade design produces a fast snap operation with maintenance of contact.

The switch is available in four basic designs, varying in operating force from three up to 12 ounces in the pin operated models, and from 1½ to 12 grams in the wire operated models. *Detroit Controls Corp.*

Circle 91 on postcard for more data

Up where the boiling point is low...



...Vernatherm® controls assure correct operating temperature for these BIG Diesel Machines



Here is your answer to tough coolant problems on Diesel and heavy-duty gasoline engines . . . Detroit Controls Vernatherm . . . a solid-charged thermostat that will take all the punishment big engines and rough duty can give it, and still give positive, precise coolant control *indefinitely.*

Pioneered by the Detroit Controls Corporation, these Vernatherm thermostats have a reputation for solving knotty problems in the roughest kinds of service.

Call on a Detroit sales engineer for application assistance . . . or write for Bulletin 213, which gives basic data on Vernatherm Controls and their function in modern engine design.

YOU LIVE BETTER WITH DETROIT CONTROLS

DETROIT CONTROLS CORPORATION
5900 Trumbull Ave., Detroit 8, Mich.
Division of American-Standard

Representatives in Principal Cities
Canadian Representatives: RAILWAY AND ENGINEERING SPECIALTIES, LTD., Montreal, Toronto, Winnipeg.

AUTOMATIC CONTROLS for
REFRIGERATION • AIR CONDITIONING • DOMESTIC HEATING • AVIATION • TRANSPORTATION • HOME APPLIANCES • INDUSTRIAL USES

Most Specified as

STANDARD POWER COMPONENTS ON ORIGINAL EQUIPMENT...

WISCONSIN Heavy-Duty *Air-Cooled* ENGINES

IN THE AUTOMOTIVE FIELD...

Widely specified for truck and semi-trailer refrigeration and air-conditioning equipment; dock and warehouse material handling equipment; auxiliary airport and automotive equipment of all types requiring compact, heavy-duty power within a 3 to 36 hp. range.

IN THE FARM FIELD...

Specified by leading "blue chip" builders of farm and orchard equipment for: combines, pickup balers, forage harvesters, garden tractors, field crop and orchard sprayers, irrigation pumping units, portable elevators and many other machines.

IN THE CONSTRUCTION FIELD...

Specified for leading makes of concrete mixers, concrete finishers, concrete cutters, power "wheelbarrows", hoists, bituminous spreaders, ditch diggers and trenchers, road rollers, conveyors, compressors, arc welders, pumping units, standby electric generators, etc.

IN THE OIL FIELD...

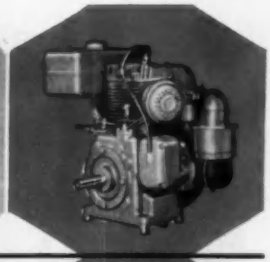
Widely specified as integral power for many types of oil field utility units such as oil well pumps, gathering pumps, dope kettles, pipe straightening machines, compressors, salt water disposal pumps, trenchers, standby power units, etc.

IN THE INDUSTRIAL FIELD...

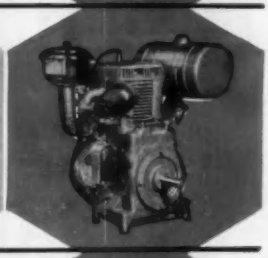
Specified for plant floor sweepers and scrubbers; fork-lift, pallet and platform trucks; plant fire-fighting equipment; power lawn mowers and leaf sweepers and a great variety of specialized applications in many fields.

● **Because Wisconsin Heavy-Duty Air-Cooled Engines match the equipment of which they became integral units . . . because they fit both the machine and the job with maximum power advantage and minimum maintenance cost . . . these fine engines merit the serious consideration of design engineers and builders of equipment utilizing engine power within a 3 to 36 hp. range. Write for Specifications Bulletins and detailed engineering data.**

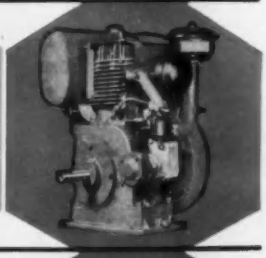
4-cycle Single Cylinder Models
ACN
BKN
2.3 to 6.8 hp.
1600-3600 rpm.



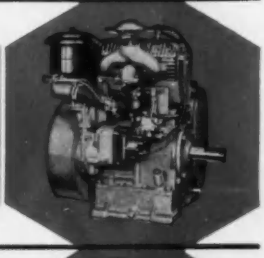
4-cycle Single Cylinder Model
AEN
4.5 to 8.25 hp.
1600-3600 rpm.



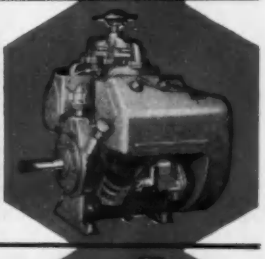
Single Cylinder Models
AFH
AGH
AHH
6 to 9.2 hp.
1600-2200 rpm.



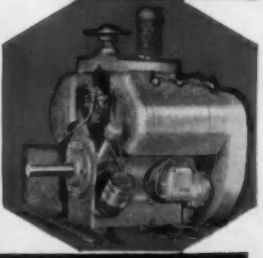
2-cylinder Models
TE
TF
TFD
7.2 to 15 hp.
1400-3000 rpm.



V-type 4 Cylinder Models
VE4
VF4
13 to 25 hp.
1400-2400 rpm.



V-type 4-Cylinder Model
VG4D
25 to 36 hp.
1400-2200 rpm.





WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN

A 8771-1PC

Now... both kinds of Friction Engineering!

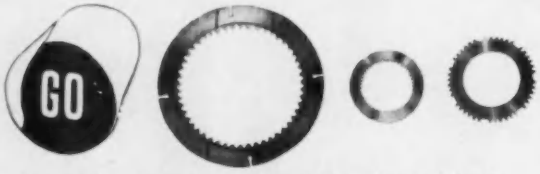


CALL IN American Brakeblok

TO GET THE JOB DONE BETTER, FASTER!



All types of organic friction materials, including light- and heavy-duty brake linings and thick blocks, clutch facing and special products for industry.



Sintermet—sintered metallic friction materials for transmission and clutch applications in the automotive, aircraft and industrial fields.

STOP or GO—American Brakeblok can help solve both brake and clutch or transmission problems with a full line of friction materials. Sintered metal products, as well as organic, are backed by the full resources of American Brakeblok to provide better answers, faster.

Research: Your particular problem may be solved already by one of the hundreds of formulas now on our shelves.

Testing: Continuous lab and road evaluation of all factors of performance and service life can shortcut your own testing time.

Production: Precise, point-by-point production of three modern plants can meet the needs of vehicles and machines.

Service: Our application engineers work hand in hand with your project team—eliminate lost hours when design changes call for new requirements.

To take full advantage of these American Brakeblok facilities, we suggest you check with us during initial planning stages. A call or letter will bring quick action.

Brake Shoe

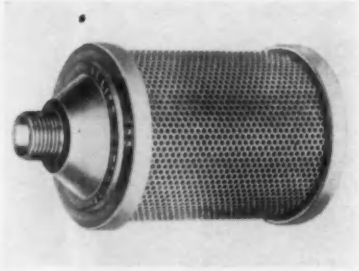
AMERICAN BRAKEBLOK DIVISION
DETROIT 9, MICHIGAN

New Production EQUIPMENT

(*Continued from page 509*)

Noise Attenuator

THE 4-44 series pneumatic noise attenuator, developed for air-operated equipment, features developments such as an internal resonator, and a new air diffuser having a larger exhaust radiation area with 250% greater air flow capacity. The Atomuffler when connected to the exhaust port of air-operated equipment is said to eliminate 99.9 pct of the objectionable exhaust noise.



Pneumatic Noise Attenuator

It is available in eight pipe sizes ranging from ⅛ to 2 in. N.P.T., and is made with a male pipe thread for direct connection to the exhaust port of air-operated equipment. *Allied Witan Co.*

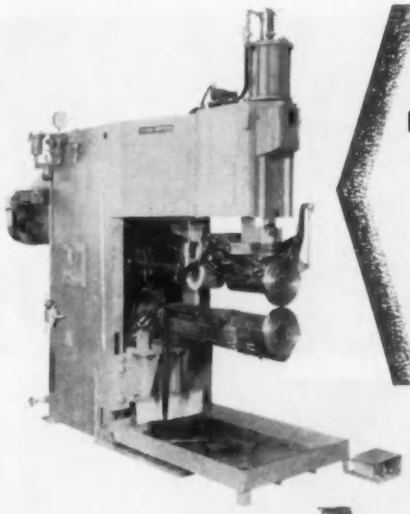
Circle 54 on postcard for more data

Automatic Jig Boring

MILLING machines can be converted for precise jig boring operations by the application of a linear Inductosyn for micro-positioning and automatic control. The system provides for control of x and y axes by elements mounted along the table and cross slides of the miller, which are electronically actuated by a push-button keyboard input control for x and y positioning with a program drum providing for automatic operation of 15 positions.

The unit consists of spaced metallic conductors on glass plates, comprising circuit elements, a scale which is attached to a stationary part of the machine and a slider carried by the moving part. Inasmuch as these elements are mounted directly on the machine, errors due to lead screws, rack and pinions, or gear trains are said to be

(*Turn to page 523, please*)

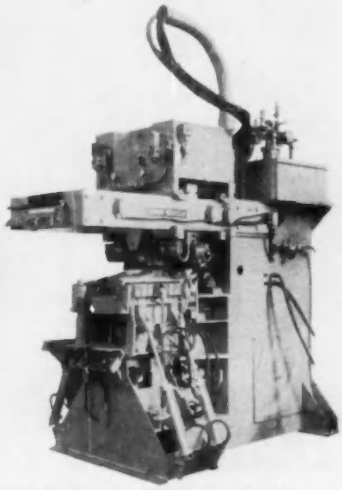


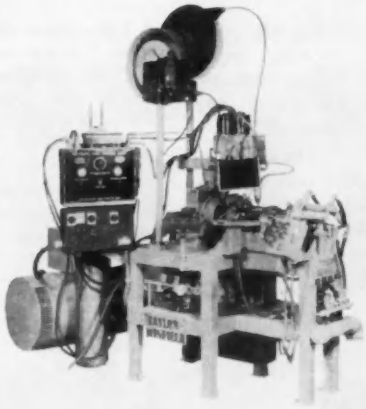
STANDARD RESISTANCE WELDERS

Efficient, versatile for all basic uses; low operating cost, prompt delivery, long service life. T-W manufactures a complete line of resistance welder equipment—spot, seam, projection and flash-butt.

SPECIAL RESISTANCE WELDERS

Resistance welders specifically designed for your work—most efficient production, including mechanical features, such as feed, handling, discharge, bending, forming or machining.





SPECIAL ARC WELDERS

Custom designed for arc-welding assemblies on a production basis. All modern welding methods and equipment are incorporated. T-W are specialists in production line techniques.

The TAYLOR·WINFIELD Corporation
WARREN, OHIO

ELECTRIC RESISTANCE AND ARC WELDING MACHINES

Sales and Service

CHARLOTTE • CHATTANOOGA • CHICAGO • CLEVELAND • DALLAS
DAYTON • DENVER • DETROIT • LOS ANGELES • PHILADELPHIA
PORTLAND, OREGON • SEATTLE • ST. LOUIS • STAMFORD
WASHINGTON • OAKVILLE AND WINDSOR, ONTARIO



MONEY-SAVING MAGIC IN THIS "HEEL AND TOE"

This Tinnerman fastener is modeled after your foot . . . there's a heel and toe . . . it slides easily into the holes punched in the metal, fiber, or plastic, even as your foot slides into a shoe. But it is much easier to put on than to take off!

The primary function of this SPEED NUT fastening principle is to provide a fast, easy-to-apply, low-cost, self-retaining fastener. Its snap-on attachment feature requires little skill and no welding or staking. Yet it assures positive retention for center panel or blind locations.

Tinnerman "heel-and-toe" fasteners can also have a wide variety of fastening features. The self-retaining heel-and-toe can be combined with the famous Tinnerman SPEED NUT impression. Or with a speedy cable clip . . . or a spring catch . . . a molding clip . . . a wire retainer . . . almost any fastening idea you require.

Tinnerman sales engineers are ready to make a SPEED NUT Analysis of your fastening requirements. Or you can write to us for details and engineering data. *Tinnerman Products, Inc., Box 6688, Dept. 12, Cleveland 1, Ohio.*

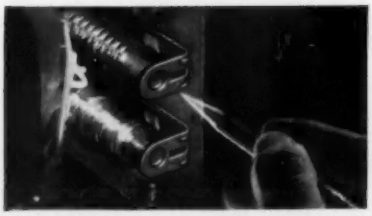
TINNERMAN
Speed Nuts
FASTEST THING IN FASTENINGS®



On dictating equipment, this SPEED CLIP® holds wires safely away from moving parts.



SPEED CLIPS secure molding on plastic sign, help manufacturer gain 48% assembly saving.



Assembly of TV tuning coil to chassis and servicing simplified with special SPEED CLIP.

New Production EQUIPMENT

(*Continued from page* 521)

eliminated. Measurements are referenced to an established zero reference, thereby avoiding accumulative errors.

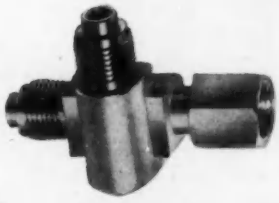
Work performed consists of automatic sequential operations comprising boring and reaming of holes. The inherent accuracy of the Inductosyn is said to be 0.0001-in. with repeatability of 25 microinches.

While in the particular instance cited a keyboard and program drum input control is utilized, operation from punched cards, punched tape or magnetic tape can be provided. The control can be applied to a number of linear and rotary axes and programmed for either simultaneous or sequential operations. The system for automatic positioning control or numerically controlled contour machining can be applied to machine tools of various types and sizes, such as drill presses, boring machines, milling machines, grinders, jig borers, gear cutters and lathes. *Farrand Controls, Inc.*

Circle 55 on postcard for more data

Dual Drive Adapter

THE Circle Ess dual drive adapter is used in conjunction with flexible shaft drives where more than one unit is to be driven from the same power source and provides two gear



Circle Ess adapter

ratios. It is equipped with threaded connection having 0.104-in. internal square drive and in ratios of 1 to 1, 15 to 1, 16 to 1 and 17 to 1 for either left or right rotation.

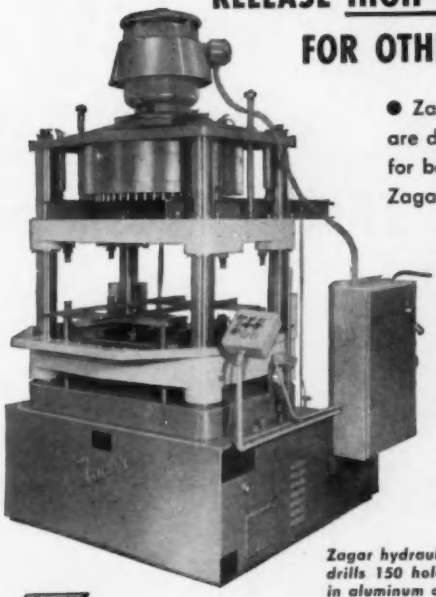
The body is made of aluminum alloy with brass connectors, and the hardened steel gears run in oil-lite bearings which are permanently lubricated for high and low temperatures. Weight is only four-oz. *F. W. Stewart Corp.*

Circle 56 on postcard for more data

(*Turn to page* 526, *please*)

Zagar 4-POST RAM TYPE DRILLING MACHINES

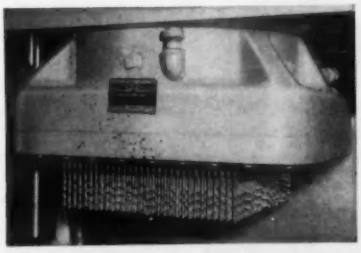
RELEASE HIGH COST DRILL PRESSES FOR OTHER IMPORTANT JOBS



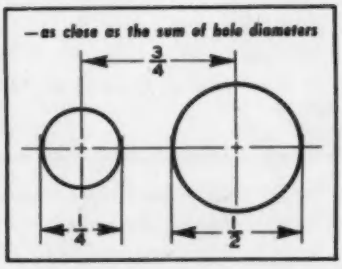
● Zagar hydraulic drilling machines are designed for high speed drilling—for both production and limited runs. Zagar 4-post machines reduce high cost tooling, and handle a range of work that ordinarily necessitates the use of *several different machines*. Very important, Zagar drilling machines release capital equipment for other purposes. Zagar 4-post machines lower your capital investment. They quickly pay out. What, sir, are your production requirements?

Zagar hydraulic ram-type 4-post machine drills 150 holes, 1/4" through 5/8" dia., in aluminum casting at one pass.

Zagar GEARLESS DRILL HEADS are the answer to close-center drilling on your own equipment



1000 spindles, drilling simultaneously, are possible with Zagar gearless drill heads. Any pattern drilling any machinable material is standard practice; any size up to 1½" dia. . . . Zagar can design the tooling for the entire drilling job; or, a Zagar



gearless drill head can be used on your existing drill press. Zagar engineering is flexible enough to recommend and supply the answer that will cost the least and produce the most.

★ ★ ★

Ask for Zagar Catalog "U-3"

ZAGAR TOOL, INC.

23896 LAKELAND BLVD. • CLEVELAND 23, OHIO

Zagar TOOLS FOR INDUSTRY and SPECIAL MACHINERY

Q: *How to heat aircraft...vehicles?*

Q: *Chilly day at Thule (−50°F.) . . . how to start fire-crash truck within seconds, provide 90,000 Btu/hr. in small space?*

A: Janitrol liquid heater (tested to −65°F.) keeps engine ready to go, provides cab and cargo heating too!

Q: *How to provide on-ground and in-flight comfort, defrosting, and anti-icing heat in business aircraft?*

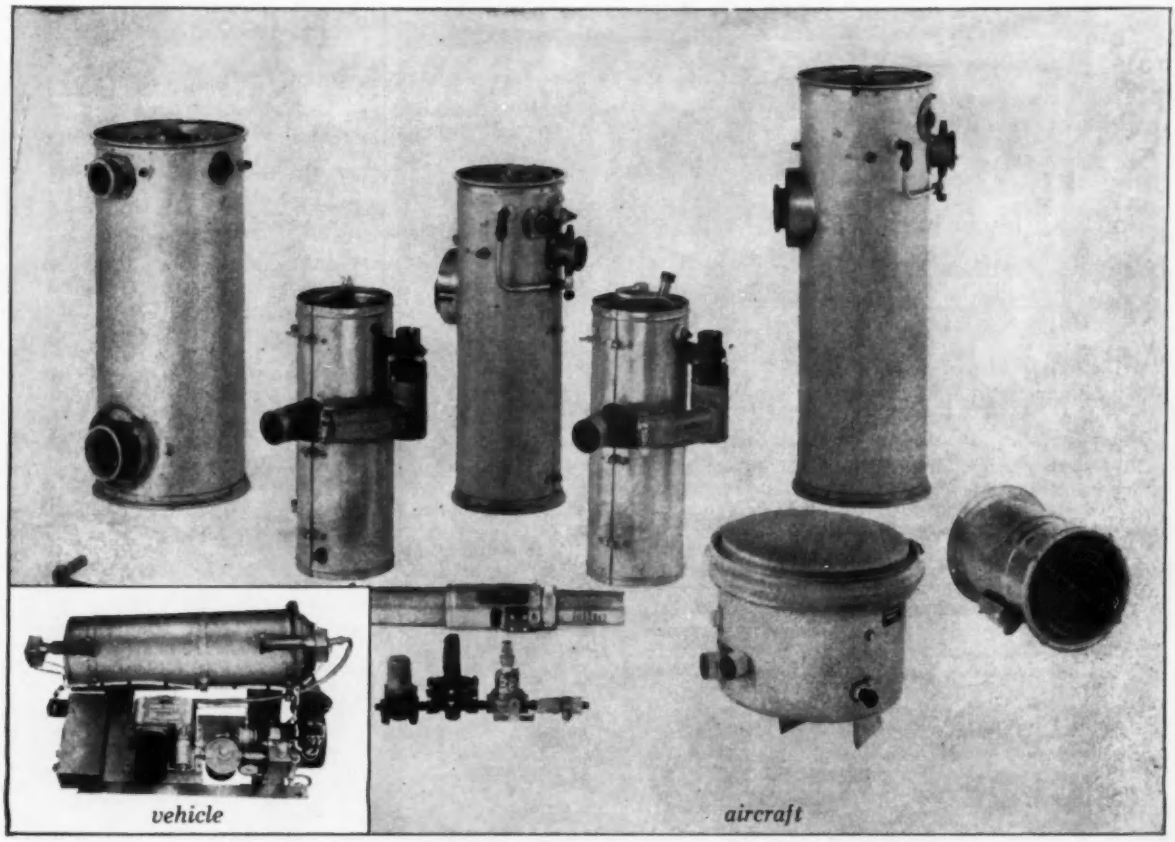
A: Standard Janitrol heater (100,000 Btu/hr.) in nose . . . ram air for in-flight, blower for ground operation—holds 70°F. inside when it's −40°F. outside.

Q: *How to get dependable 1,400,000 Btu/hr. output for new DC-7C—for cabin heating, anti-icing, defrosting—in all weather?*

A: Four S-300 Janitrol heaters. (Nothing new here—Janitrol heaters have been standard on all DC-6's and DC-7's.)

Q: *How to find money to build heated storage buildings for Diesel bus fleet?*

A: No need to find it, park the fleet outside—Janitrol liquid heaters keep engines, and bus interiors warm, ready to go at a fraction of cost of new building.



A:

A: Call on Janitrol. If there's a need for heat for the job anywhere, chances are Janitrol can supply it, or build it from service-proved components.

Ever since designing and manufacturing the first successful heaters for aircraft 14 years ago, Janitrol has built thousands of heaters for aircraft and ground vehicles.

Today the name Janitrol stands for leadership in heating equipment, and combustion engineering. Your Janitrol representative is always at your service.

Janitrol

AIRCRAFT-AUTOMOTIVE DIVISION, SURFACE COMBUSTION CORPORATION, COLUMBUS 16, OHIO

DISTRICT ENGINEERING OFFICES: NEW YORK, 225 BROADWAY; WASHINGTON, D. C., 4650 EAST-WEST HIGHWAY; KANSAS CITY, 2201 GRAND AVE.; FORT WORTH, 2509 BERRY ST.; HOLLYWOOD, CALIF., 7046 HOLLYWOOD BLVD.; COLUMBUS, OHIO, 400 DUBLIN AVE.

ALUMINUM FINISHES

THE FINISHING TOUCH



by A. B. HOEFER
vice president
FREDERIC B. STEVENS, INC.

Will Anodized Aluminum Replace Nickel-Chrome Finishes?

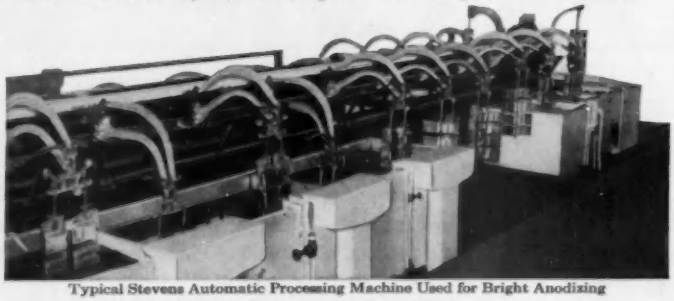
Affirmative answers to this question are revealed in several current business publications and our own sales figures.

Speeding the change is the continued tight supply of nickel. Manufacturers have been forced to look for substitutes for nickel and like the results anodized aluminum have given them.

A trend is developing. Volume of Stevens Automatic anodizing equipment sold in 1955 was nearly double the volume for the two preceding years. At the same time, sales of Stevens compositions used in buffing and polishing aluminum were showing a 50% increase.

Frederic B. Stevens, Inc., manufacture equipment for both nickel-chrome and aluminum finishes. We believe both types of finishes will increase in demand but at the moment the interest in aluminum is high.

If you are considering aluminum for your product, you can be assured that aluminum parts can be bright anodized and finished to compare favorably with the fine finish of chrome plate. In addition, aluminum can be dyed, resulting in non-fading colored finishes.



Typical Stevens Automatic Processing Machine Used for Bright Anodizing

Stevens aluminum anodizing equipment is presently being used and recommended in the finishing of colored anodized tumblers, utensils, refrigerator components, rivets, automotive trim, lighting reflectors, etc.

Stevens' experience in furnishing complete anodizing equipment installations assures you of the latest techniques—the finest finishes—at the lowest costs.

For long range planning consider the versatility of Stevens Automatic equipment. Changes of cycles or processes can be accomplished quickly and inexpensively. Your Stevens Automatic Processing Machine for anodizing can be changed to a nickel-chrome cycle at a later date.

If your design engineers are talking of aluminum to add sales appeal excitement, cost reducing features to your new product lines, let us discuss your requirements with you.

For further information write to Frederic B. Stevens, Inc., Detroit 16, Michigan.

FREDERIC B. STEVENS
INCORPORATED
YOUR METAL FINISHING SUPERMARKET
DETROIT 16, MICHIGAN

METAL FINISHING EQUIPMENT AND SUPPLIES FROM CASTINGS OR STAMPINGS TO FINISHED PRODUCT

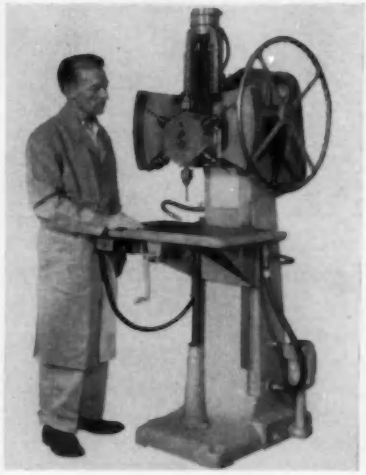
BRANCHES:
Buffalo • Cleveland • Indianapolis • New Haven

New Production EQUIPMENT

(*Continued from page* 523)

Turret Drill

THE Burgmaster model 1C turret drill, recently introduced, is designed to fill the need for a smaller, faster unit. It handles holes up to



Burgmaster turret drill

⅝-in. in steel, has a seven-in. stroke and a speed range of 325-4050 rpm.

The machine features fast power indexing, sensitive feed, preselective speeds and stops, time savings and increased accuracy by elimination of quick change tools, and ability to do any combination of six operations in one set-up. *Burg Tool Manufacturing Co.*

Circle 57 on postcard for more data

Cementable Teflon

A NEW method for obtaining a cementable surface on shapes fabricated from "Teflon" tetrafluoroethylene resin has been announced. Details of the treatment will be made available to processors of the resin. "Teflon," normally considerably slicker than ice, is notable for its refusal to stick to anything.

After treatment, it can be bonded satisfactorily with conventional adhesives to a range of materials, including "Teflon" itself. The treatment has been found not to affect the other properties of "Teflon" significantly. *E. I. du Pont de Nemours & Co.*

Circle 58 on postcard for more data



AUTOMATION WITH ARO PAR-A-MATIC DRILLS



Speeds Drilling for Tecumseh Products Co.

Drilling six holes at a time in a compressor piston with ARO Par-A-matic Drills helps Tecumseh Products Co., Tecumseh, Mich., increase output, reduce man-hours.

A group of Par-A-matics will drill any number of holes simultaneously . . . often in *less time* than would be needed for a single hole. Set-up adjustments are fast and easy. Air-operated . . . adjustable stroke length . . . variable rate of feed. ARO Field Engineers offer full assistance in planning multiple Par-A-matic installations. Write for bulletin 5546-T.

THE ARO EQUIPMENT CORPORATION
Bryan and Cleveland, Ohio
Aro of California, Los Angeles 7, California
Aro Equipment of Canada, Ltd., Toronto 15, Ontario
Offices in All Principal Cities

IN ACTION
AT THE ASTE SHOW
BOOTH 638

See the new ARO Par-A-matic and automatic drills . . . the new multiple nutsetter . . . the new link chain hoist and other ARO tools.

ARO AIR TOOLS

Also . . . AIR HOISTS . . . LUBRICATING EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

MEN *in the* NEWS

(*Continued from page* 79)

Joseph T. Ryerson & Son, Inc.—**R. Kent Cox** has become office and credit manager for the Buffalo plant.

Minnesota Rubber and Gasket Co.—**Robert R. Johnson** has been named chief engineer.

CDC Control Services, Inc. — **J. Lawrence Tecosky** is now vice-president and contract manager.

General Electric Co.—**Bernard Levine** has been made manager of advanced airframe engineering; **Robert W. Mayer**, manager of advanced guidance system engineering; **Albert Clark**, manager of advanced nuclear weapons engineering; **Arthur W. Robinson**, manager of systems engineering; **Roger E. Robertson**, manager of instrumentation engineering; **John O. Powers**, manager of aero-thermodynamics engineering; and **Raymond C. Berendsen**, manager of control engineering in the Special Defense Projects Dept.



American Machine & Foundry Co. — Harold G. Cutright has become director of sales of the General Products Group.

Giddings & Lewis Machine Tool Co.—**Edgar L. McFerren, Allan L. McKay,** and **Erich C. Wussow** have been named vice-presidents and general managers of the G & L Hypro, Cincinnati Bickford, and Kaukauna Machine & Foundry Divs., respectively. **Erwin J. Kaiser** has been made general manager of the Davis Boring Tool Div. **Harry E. Ankeney** has been appointed manager of research; **Jesse Daugherty**, staff vice-president for engineering; **Fred C. Freund**, vice-president for industrial relations; and **Morton R. Swift**, vice-president for finance and treasurer.

Landers Corp.—**John C. Siegmann** was elected vice-president, secretary and treasurer; **Frank W. Baker**, general consultant; **Leonard E. Canner**, assistant vice-president; and **Timothy Y. Hewlett, Jr.**, assistant secretary and appointed general purchasing agent.

Harris Products Co.—**Dan T. Bradley** has been named vice-president in charge of engineering and sales.

Amalie Div., L. Sonneborn Sons, Inc.—**Chester H. Remmel** has become sales manager.

Clark Controller Co., Marketing Div.—**E. R. Jung** is now vice-president in charge of marketing.

Lincoln Div., Ford Motor Co.—**John F. Mayhew** is now manager of public relations.

Rheem Automotive Co. — **Howard Laurent** has been named chief engineer.

Aero Supply Mfg. Co., Inc.—**J. Leslie Lenton** has been named general manager.

Plymouth Div., Chrysler Corp.—**Robert L. Norwood** was made assistant to the director of public relations.

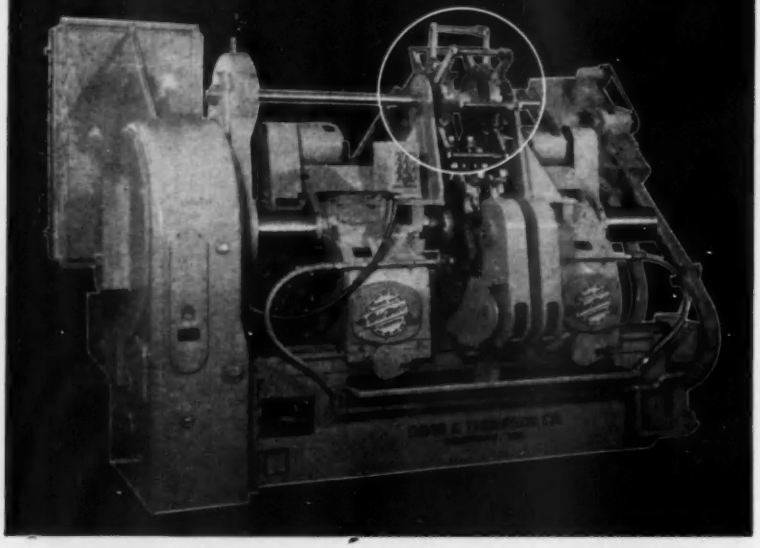
Clevite Corp.—**Frank Fraser** has been named secretary.

Bohn Aluminum & Brass Corp., Fabrication Div.—**Guy H. Pitts** is now manager.

Lincoln Div., Ford Motor Co.—**Joseph J. Seregny** has been named advertising manager.

(*Turn to page* 530, *please*)

...Milling and Centering Steering Gear Shafts at the Rate of 360 Per Hour



This continuous type milling and centering machine has been furnished with an automatic unloader (indicated by circle) which transfers finished parts onto a conveyor or discharge chute. Milling and centering of both ends is done simultaneously and in continuous production.

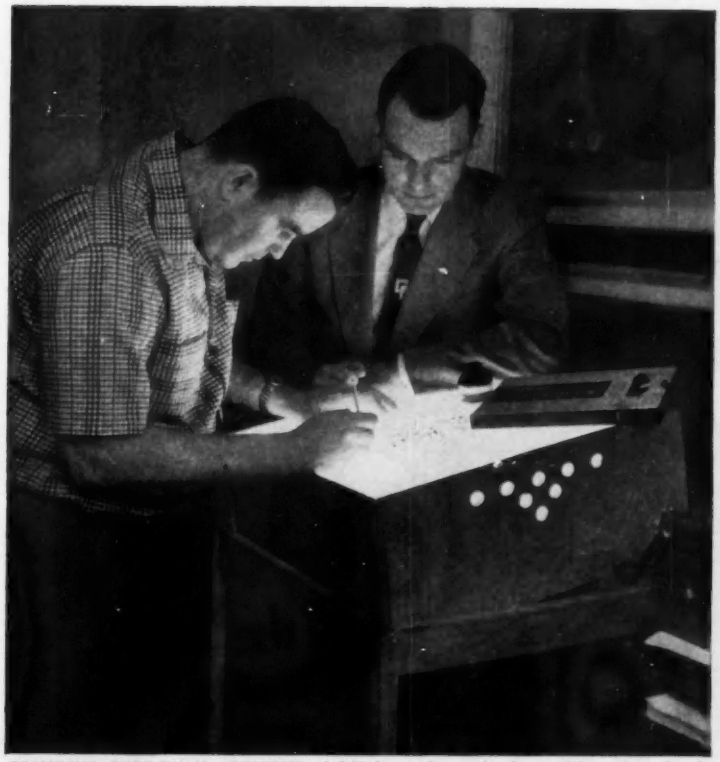
Basically, this is a standard ROTO-MATIC machine tooled-up to handle special production requirements. Rough and finish milling and centering spindles in both heads have micrometer endwise adjustment. Heads are adjustable on the ways. With equalizing jaws in fixtures plus chain clamping, machine is fully automatic.

If you have work of this nature, consult D&T engineering for further details.

Roto-Matic

Davis and Thompson Co.

4460 N. 124th St. MILWAUKEE 10, WISCONSIN



PRESIDENT GORDON MacDONNELL of Minitron, Inc., checks positive of a circuit before it's attached to steel screen for use. Du Pont Technical Representative Dick Walters, a frequent visitor at Minitron, Inc., watches operation.



DU PONT SCREEN PROCESS FILM is used with a steel-mesh screen for applying acid-resisting paint to copper plates. Plate is then immersed in an etching bath as shown in the photograph above.



MINITRON EMPLOYEE template-drills a transistor radio circuit board – final step in production. Circuit must be identical to original drawing.

For critical printed circuits–

"Accuracy to .010" easy with tough, dependable Du Pont Screen Process Film!"

—reports President Gordon MacDonnell, Minitron, Inc., La Jolla, California.

"Our company produces etched circuits for every electronic application from transistor radios to guided missiles," says Gordon MacDonnell, President of Minitron, Inc. (formerly Digital Products, Inc.) "For such exacting work, we have to have dependable, easy-to-handle stencils. That's why we use Du Pont Screen Process Film.

"Since extremely close tolerances are necessary in our operation," continues Mr. MacDonnell, "we use Du Pont Screen Process Film in conjunction with stainless-steel mesh screens – that way, we get lines of .010" or finer as a routine matter.

"And, instead of destroying stencils after use, they are simply sprayed clean and put on racks for indefinite storage. The steel mesh and Du Pont Screen Process Film make a tough combination that can be used over and over again without loss of important detail."

Mr. MacDonnell concludes, "Before we switched to Screen Process Film, production costs often prohibited accepting small jobs. Stencils frequently had to be done over, and were often discarded after 200 to 300 boards. But, with Du Pont Screen Process Film, many short cuts are possible. Reproductions are *photographically* accurate, and we can get more than 5,000 boards from one stencil . . . with perfect results!"

For more information about this versatile film, just mail the coupon below.

DU PONT
SCREEN PROCESS FILM

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Photo Products Department
2420-17 Nemours Bldg.
Wilmington 98, Delaware

Please send me the free booklet "Du Pont Screen Process Film."

Name.....

Company.....

Street.....

City.....*State*.....

☐ Please have your technical representative call. 102

DELIVERY OFF THE SHELF

IN 64,000 COMBINATIONS

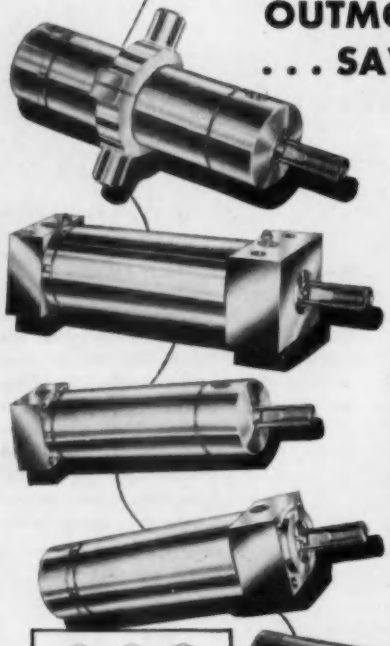


T-J

Spacemaker

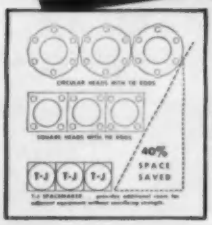
CYLINDERS

OUTMODE ALL OTHERS ... SAVE 40% SPACE!



You'll never go back to tie-rod cylinders, once you apply T-J Spacemakers to your push-pull-lift jobs! Advantages in space saved, weight saved, greater strength and off-the-shelf delivery are among the dozens of Extras you get as Standard!

Now—these sensationally popular T-J Spacemaker Cylinders are available off the shelf *in sizes up to 8".* This means as many as 64,000 different combinations of styles, bores, strokes, mountings, etc., *immediately available!* Oil pressure to 750—Air to 200 P.S.I. Super Cushion Flexible Seals for Air ... New Self-Aligning Master Oil Cushion. Hard chrome plated bodies and piston rods (Standard). Only from T-J can you get these new ingenious cushion designs! Send for bulletin SM-155-2. The Tomkins-Johnson Co., Jackson, Michigan.



Member of the National Fluid Power Association

See us in Fluid Power Area ASTE Show Booth 225

T-J TOMKINS-JOHNSON

RIVETORS . AIR AND HYDRAULIC CYLINDERS . CUTTERS . CLINCHORS

MEN *in the* NEWS

(*Continued from page* 528)

Bendix Aviation Corp., Kansas City Div.—**Richard M. Somers** has become director of engineering.

Lincoln Div., Ford Motor Co.—**M. D. Imus** was made manager of sales planning and analysis.

Colonial Metals Co.—**Fred E. Solymos** has been appointed vice-president and general sales manager.

Chrysler Div., Chrysler Corp.—**Walter E. Foraker** is now organization and development manager.

Willys Motors, Inc.—**Jacque H. Passino** has become executive assistant to the vice-president in charge of sales.

Parker Appliance Co., Industrial Hydraulics Div.—**Herbert H. Schmiel** is now chief engineer.

Hooker Electrochemical Co.—**Clark R. Simmons** has been named advertising manager.

Crucible Steel Co. of America—**Bernard L. Jones** has been appointed chief engineer, and **Tore Wallin** has been named assistant chief engineer.

Pratt & Whitney Co., Inc.—**Harold T. LeMay** was named director of employee relations.

Rinshed-Mason Co.—**William Vyn** has taken over the Detroit sales territory, and **Robert C. Aikin** has succeeded him as industrial sales manager.

Norge Div., Borg-Warner Corp.—**Thoma P. Hyde** has been appointed manager of defense contract sales.

Ford Motor Co.—**Edward E. Rothman** has been named director of the product advertising and sales promotion office.

Ford Motor Co.—**Charles R. McCormick** has been made manager of the Cleveland Stamping Plant, and **Fred J. Meredith** has been chosen manager of Cleveland Engine Plant No. 2.

Minnesota Mining & Manufacturing Co., Fibrous and Industrial Tape Div.—**James O. Hendricks** and **Carl J. Calabrese** have been named manager of research and development and manager of products control, respectively.

Park Chemical Co.—**Charles R. Foreman** has been named general sales manager.

Allis-Chalmers Mfg. Co.—**Myron W. Rhoten** has been named managing director of the British subsidiary.

ULTRASONICS cleans 20,000 COMPRESSOR PARTS a day!



SPLIT-SECOND CLEANING of hidden recesses & blind holes made possible by ULTRASONICS!

Instantaneous cleaning . . . explosive scrubbing . . . absolute penetration of recesses . . . are assured by Circo's ultrasonic degreasing equipment which blasts loose inaccessible soil and contaminants from blind holes, crevices and invisible pores.

Circo ultrasonic equipment, unmatched for speed, efficiency and economy, is available in small, manually operated units or in conveyorized units for continuous, mass output . . . and Circo's intensive research and experience with this revolutionary new cleaning method are at your disposal.

Circo degreasers for every need are available in corrosion resistant, compact units for the small shop, large automatic models for mass production, and all sizes between. Sturdy and dependable vapor, solvent-vapor-solvent, vapor-spray and ultrasonic models make Circo the standard for economy, performance and assured long life.

Complete information on request.
Bulletin OP2 on solvent degreasers
Bulletin UC1 on ultrasonic equipment
Bulletin 521 on metal washing equipment

Since 1923

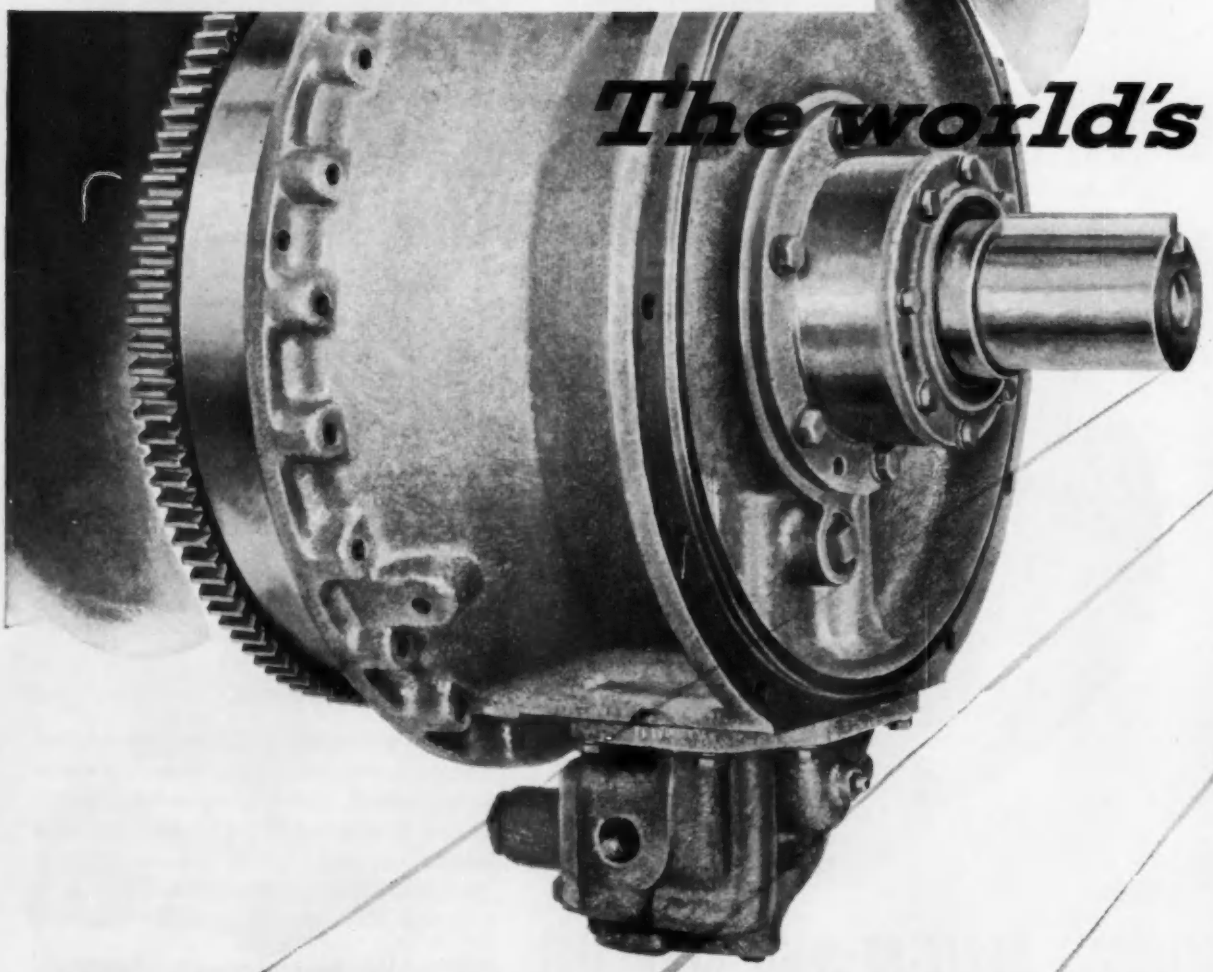
CIRCO

CIRCO EQUIPMENT COMPANY
51 Terminal Avenue, Clark (Rahway), New Jersey

OFFICES IN PRINCIPAL CITIES • NATION-WIDE ENGINEERING FIELD SERVICE

NEW *from Allison –*

The world's



FOR ANY JOB FROM 100 TO 350



Drilling Rigs



Shovel-type Loaders



Off-Highway Trucks

most versatile TORQUE CONVERTER

Now, from Allison, comes the world's most versatile torque converter—the Series 500 TORQMATIC—to give you more power over a wider working range and permit you to standardize on *one* type of converter for *all* your equipment.

In *one standard housing* it gives you a choice of 4 ranges, 7 torque ratios, 100 to 350 horsepower coverage.

It's available for practically any application—automotive, industrial or a combination of both.

And it's designed for rough, tough service in scores of fields—construction, mining, oil drilling, logging, materials handling—wherever gasoline or Diesel engines are used.

This new Series 500 TORQMATIC Converter embodies every engineering advance developed by Allison in building tens of thousands of TORQMATIC Converters over the past seven years.

In many applications it will permit the use of lower horsepower engines with no reduction in *working* power because it multiplies engine torque (true measure of an engine's *working* ability) from 250% to 360%.

And the new Series 500 TORQMATIC Converter will also permit engines to run in their best speed range—transmit more power in the high-speed range.

Soon you will be able to get the TORQMATIC 500 in scrapers, off-highway trucks, log loaders, drilling and servicing rigs, shovels, cranes, graders, industrial locomotives, ditchers and shovel-type loaders made by a score or more manufacturers.

For the names of these manufacturers and full details on the TORQMATIC *Series 500 Converter write to:*

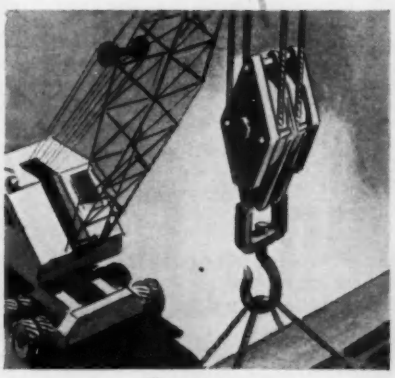
Allison Division of General Motors
Box 894A, Indianapolis 6, Indiana



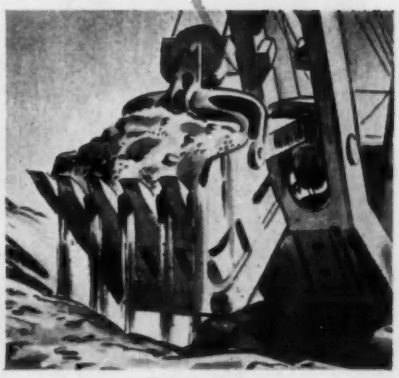
HORSEPOWER GM TORQMATIC *Allison* TORQMATIC DRIVES



Graders



Cranes



Shovels

Industry News

(*Continued from page* 500)

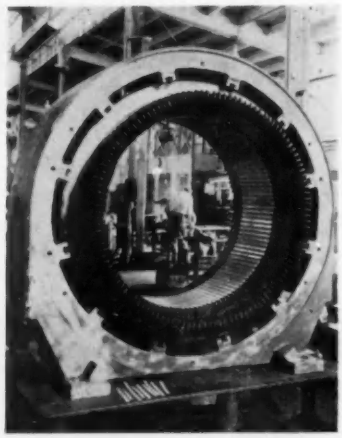
Car Production Schedule Reduced By Continental

Continental Div., one of the few automobile makers which was operating at peak high capacity while others were cutting production, has trimmed output. The division has reduced production from 20 cars a day to its original schedule of 16 units. It says it has now satisfied its heavy backlog (down to six weeks), and is building to dealer orders.

Eaton Output, Sales, Net Hit New Peaks During '55

The physical output, dollar volume of sales and net profits of Eaton Manufacturing Co. in 1955 attained the highest levels in the company's history.

Sales for the year, reflecting the high level of passenger car and truck production, amounted to $218,116,159, an increase of $53 million over the total for 1954. Net earnings, after provision for income taxes, rose to $13,285,496. This compared with net earnings of $8,559,021 in the preceding year.



PLASTIC INSULATION

Rewound coils, such as the one on this 600-hp electric motor, are expected to provide a sizable increase in service life in such tough applications as traction motors and Banbury mixers. The coils make use of a new type of insulation for large motors and generators—a durable laminate of glass cloth and mica-filled plastic based on Bakelite epoxy resin.

Nuclear Corp. Enters A Suit Against Bohn Over Reo Assets

The second suit within the past few months has been filed against Bohn Aluminum & Brass Corp. and Reo Motors, Inc., by interests of Nuclear Corp. of America, Inc. Certain officers and directors of both Reo and Bohn are also involved.

The suit asks the Detroit Circuit Court to void the sale of assets of the old Reo Motors, Inc., of Michigan to Reo of Delaware (a subsidiary of Bohn) and to return them to Nuclear Corp. An accounting of damages, estimated by Nuclear to be about $15 million, is also requested.

Nuclear Corp. was formed last year through the merger of Reo Holding Corp.—the corporate shell remaining after sale of Reo of Michigan's assets to Reo of Delaware—with Nuclear Consultants, Inc., of St. Louis, Mo. The suit charges that the status of Reo was changed between the time stockholders approved sale of its assets last July and the time of the sale in December. It also alleges that the transaction should have been resubmitted for stockholders' approval.

The original offer to buy Reo Motors was made by Henney Motor Co. of Freeport, Ill., and approved by the stockholders. Henney subsequently formed Reo of Delaware to take over Reo of Michigan's assets but did not complete the purchase by Aug. 31, the termination date of the proposal.

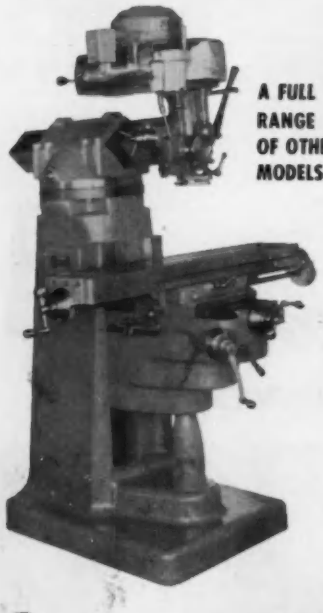
(*Turn to page* 536, *please*)

LIKE A "45" AUTOMATIC



this NEW "45" INDEX MILL

has the "CALIBER" and "ACCURACY" to do your MILLING, DRILLING and BORING JOBS .. BETTER, FASTER AND MORE ECONOMICALLY!



A FULL RANGE OF OTHER MODELS.

The big caliber derives from the sliding overarm—The unique square design of this overarm gives much more rigidity with its resultant greater accuracy—It provides extra range and capacity—More usable working space—More versatility in set-up—More power at the cutter. No adjustment required on overarm and head after use, and no need to re-indicate head after moving overarm. Speed range with 9 changes makes possible the use of high speed or carbide tipped cutters to the best advantage. Many other important features.

Write for Literature.

INDEX MACHINE CO.

551 N. MECHANIC STREET JACKSON, MICHIGAN

backed by a 50-year
record for dependability...

★ ★ ★ ★

STEWART-WARNER

INSTRUMENTS AND GAUGES

including complete drive equipment—designed, engineered and manufactured to your specifications

... all from one manufacturing source!

For half a century, Stewart-Warner has made quality instruments and gauges for automotive, industrial, marine and agricultural applications.

Many leading manufacturers capitalize on this unmatched experience and know-how by specifying Stewart-Warner equipment *exclusively.*

The complete Stewart-Warner line offers you a wide choice of gauges, speedometers, tachometers, and tachourmeters. Entire panels can be custom-made to your own specification. Everything you need for a complete installation—including flexible shafts, gears, and adapters—are available. Let Stewart-Warner supply *all* your instrument needs—*from one dependable manufacturing source.*



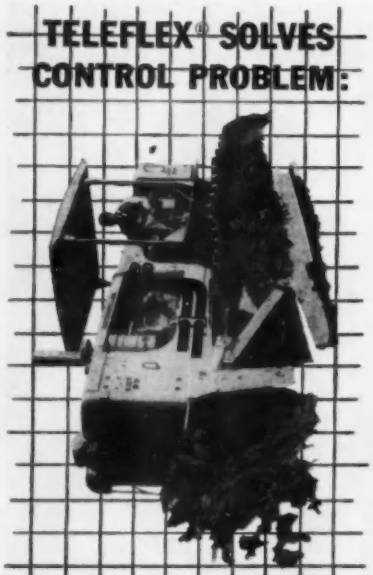
For further information, write:

STEWART-WARNER

STEWART SW WARNER

Dept. M-36, Original Equipment Sales
1826 Diversey Parkway, Chicago 14, Illinois

TELEFLEX® SOLVES CONTROL PROBLEM:



HOW TO START a Cat Diesel Tractor— ALWAYS!

Problem: a 30-ton Caterpillar D9 Diesel Tractor; provide gasoline starting engine with choke and throttle controls that *always* work!

Caterpillar engineers solved this one with a 56" Teleflex control linkage. Running from the dashboard to the gasoline starting engine, the closed Teleflex system follows a curved path and is armored for complete protection. With Teleflex, operators find that the starting controls of their big yellow D9s work regardless of ice, snow, mud or dust. There's no wobble, no rattle; the controls retain their "feel" and accuracy.

ANOTHER CONTROL JOB— SOLVED WITH TELEFLEX!

Teleflex is a compact, single-path control linkage that follows any desired devious route. A flexible, rack-like cable, operating through precisely drawn conduit, transfers linear, arc, or rotary controlling motion as tension or compression push-pull motion. Wherever rotary motion, up to a full revolution or more, is required, the cable helix meshes precisely with a hobbed control wheel.



A VARIETY OF CONTROL APPLICATIONS

plus product, design and engineering information, are illustrated in descriptive *Bulletin 500*. Send for a copy to TELEFLEX INCORPORATED, 125 S. Main Street, North Wales 1, Pa.

TELEFLEX

MECHANICAL CONTROLS

LINKAGES MECHANISMS

Industry News

(*Continued from page* 534)

Chrysler Booklet Predicts Continued Horsepower Rise

The output of the modern automobile engine has increased in recent years and will continue to do so. Primary reason lies in the fact that the car buyer of today both needs and wants all of the benefits that accrue from added horsepower and other performance factors, such as improvements in torque ratings and higher displacements. Such is the basic theme of a booklet published by the Engineering Div. of Chrysler Corp. under the title "The Horsepower Story."

Tracing the growth of horsepower from the early twenties, Chrysler engineers predict that cars will need even more power in the future because they will continue to be built heavier, stronger, and larger. Thus, more power will be required just to maintain an acceptable level of performance, they state.

The booklet sums up the situation in this way: the majority of automobile buyers want large and substantial cars equipped with a host of comfort features and accessories. In order to obtain acceptable performance, it appears necessary to keep engine output high, while simultaneously striving for improvement in torque rating.

The only alternative, the booklet concludes, would be to build small, low-weight cars with a minimum number of accessories and comfort features. It is Chrysler's opinion that the car-buying public is not willing to accept such an alternative.

Hispano-Suiza, Turbomeca Join Forces in Agreement

Hispano-Suiza (largest of the privately-owned French aircraft engine companies), and Turbomeca (small jet engine builder), have signed an agreement under which a new company will be formed to coordinate technical experience and production of the two concerns. Hispano-Suiza is now concentrating almost exclusively on jet engine production under Rolls-Royce license.

Under the program it is understood that the Turbomeca Gabizo medium jet plane will go into full production. The plane's engine has a take-off thrust of 2420 lb and a maximum continuous service thrust of 1980 lb.

(*Turn to page* 538, *please*)

REMEMBER WHEN?



The oil soaked streak down the middle of every road . . . the oil puddle on the garage floor . . . busted shafts and burned bearings due to lost lubrication?



Universal Oil Seals changed that picture . . . solved these problems efficiently and economically. There's a Universal seal to fit YOUR requirements too. Over twenty-six years of specialized oil seal engineering at your service.

We invite your inquiry.

UNIVERSAL OIL SEAL CO.

P.O. BOX 74 PONTIAC 12, MICH.

Mayari R makes it lighter... stronger... longer lasting



How Miller Trailers gain extra strength without extra weight

Down in Bradenton, Florida, the plant of Miller Trailers, Inc., turns out a variety of trailers large and small. As all good vehicles should, Miller trailers cater to profitable operation by combining lightest feasible weight with topmost payload capacity.

To achieve this desirable combination, Miller engineers employ Mayari R high-strength, low-alloy steel at critical points in the trailer design. Because Mayari R's yield point is 50 pct higher than that of structural carbon steel, substantially increased strength and carrying capacity are built into such members as the upper-fifth-wheel spider and the spring suspension rail, without increasing the thickness of the steel.

Automotive vehicle designers and operators can benefit in a number of ways by taking advantage of the superior properties of Mayari R. Strength alone is usually reason enough to choose this versatile steel. But Mayari R also offers 5 to 6 times more resistance to atmospheric corrosion than carbon steel, and holds paint up to 80 pct longer, depending on the type of paint used.

Shop men find they can weld and work Mayari R about as readily as other materials, and by the same general procedures. Operators appreciate Mayari R's ability to resist abrasion, impact and vibration. The Mayari R story is fully described and illustrated in Catalog 353, a copy of which can be yours on request to our nearest office.

BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL



Industry News

(*Continued from page* 536)

Bendix Device Records Radiation From A-Bomb

Bendix Aviation Corp. is producing for the army a new type of device which records the amount of radiation discharged by an atomic or hydrogen bomb. About the size and shape of a fountain pen, it can measure up to 600 roentgens of gamma radiation from an atomic blast.

GM, Ford Pay Record Amounts On Employe Suggestion Plans

General Motors and Ford report that they paid out a record amount in awards last year for ideas contributed under their employe suggestion plans. GM paid out more than $3.2 million, substantially above the $2.4 million in 1954. Ford employes collected a total of more than $1 million.

To date, GM has given out more than $17 million in awards under its program, started in 1942. Ford, which started its plan in 1947, has spent in the neighborhood of $3.7 million.





B-L-H RIVET TESTER

The effect of rivet spacing on joint efficiency at 300 F is determined for aircraft structures at Convair's San Diego, Calif., plant and recorded for engineering study by motion pictures. A universal testing machine of 400,000-lb capacity, designed and built by Baldwin-Lima-Hamilton Corp., is used. Temperature is lowered by liquid nitrogen from the drum-like container on the left.

Olin Mathieson Readies Plans For Entry Into Aluminum Field

Details of Olin Mathieson Chemical Corp.'s plans to enter the aluminum industry with an initial investment of $120 million and a fully integrated aluminum plant have been disclosed.

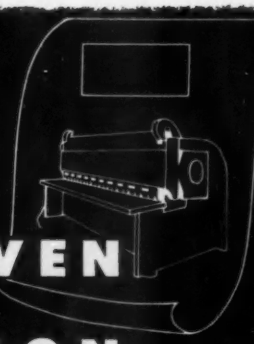
Investment in the new operation includes approximately $90 million for the aluminum plant and $30 million for the power facilities needed for the former. The new facilities will be located in the Ohio River Valley and will include an alumina plant, reduction plant, rolling mill, and power plant.

The alumina plant will have a capacity of 230,000 tons per year. The capacity of the aluminum plant will be 60,000 tons per year.

Type C Transmission Oil Is Not Favored for Cars

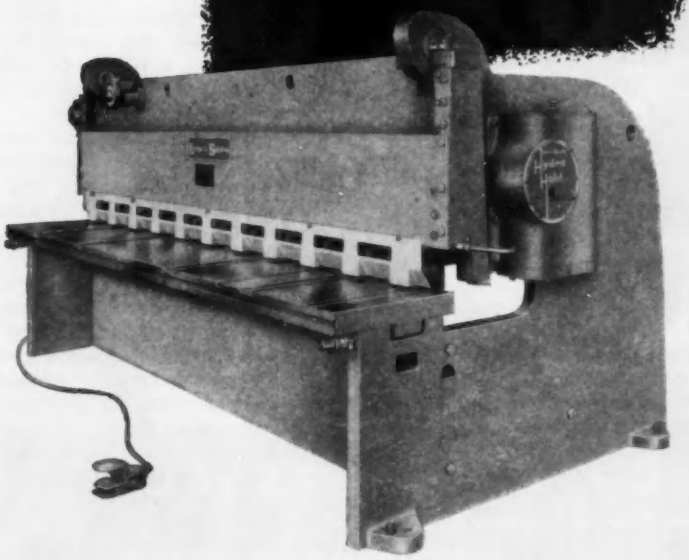
The new automatic transmission oil, known as Type C, coming into use for some larger trucks and heavy industrial equipment apparently will not be recommended for passenger car transmissions. The new oil, which is similar in specification to Military 2104B grade and cheaper than the regular Type A fluid, reportedly does not give quite as smooth a shift and does not blanket transmission noises as well as Type A; nor is it said to be suitable at temperatures below −10 F.

(*Turn to page* 540, *please*)



PROVEN DESIGN PLUS LODGE & SHIPLEY "KNOW HOW"

gives you
a better shear
for every dollar
of purchase price



Model 0610 Power Squaring Shear, 3/8" x 10' capacity

Lodge & Shipley is producing Shears equal or superior to any other. This is a fact backed up by the experience of many users who find that Lodge & Shipley Shears offer more in features, performance and low-cost maintenance.

Built to Lodge & Shipley standards of strength and accuracy, these new shears assure clean cutting to precision limits . . . smooth, safe operation . . . fast, convenient adjustments and money-saving freedom from maintenance. Lodge & Shipley Shears are available in a wide range of capacities to suit any shearing requirement. Each is a profitable investment.

Call the Lodge & Shipley representative. He'll gladly point out special features that can be important to you and arrange a demonstration.

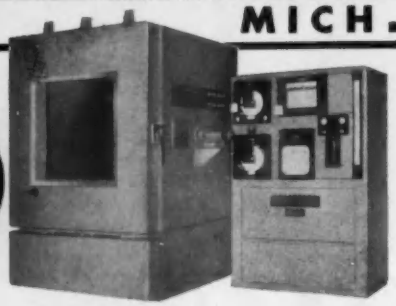
Write for FREE Bulletin No. PS-7 and the name of your nearest distributor

THE Lodge & Shipley COMPANY

3071 Colerain Avenue
Cincinnati 25, Ohio

CONRAD, Inc.

HOLLAND, MICH.



ENVIRONMENTAL TEST CHAMBERS

TEMPERATURE CABINETS

Two Types
"F" Series — Front Opening
"C" Series — Top Opening

Range:
−150° F. to +500° F.

Size:
4 cu. ft. to 72 cu. ft.

HUMIDITY AND TEMPERATURE CABINETS

"F" Series — Front Opening

Range:
−150° F. — +500° F.

Humidity:
10% to 97%
Controlable above a 35° F. D.P.

Size:
4 cu. ft. to 64 cu. ft.

ALTITUDE AND TEMPERATURE CABINETS

"F" Series — Front Opening

Range:
Temperature:
−150° F. — +500° F.

Altitude:
Up to 125,000 ft.

Size:
4 cu. ft. to 64 cu. ft.

Write for File Folder

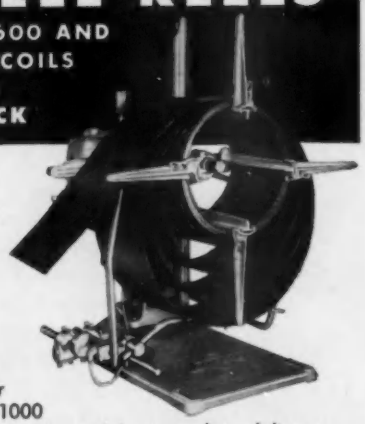
CONRAD Inc. SUBSIDIARY OF CRAMPTON MFG. CO.

141 JEFFERSON ST., HOLLAND, MICH.

MEMBER OF ENVIRONMENTAL EQUIPMENT INSTITUTE

LITTELL REELS

FOR 300, 600 AND 1,000 LB. COILS DELIVERED FROM STOCK



No. 10 Littell Motor Driven Automatic Centering Reel for up to 1000 pound coils.

Three sizes of Littell Reels, for 300, 600 and 1000 pound coils are now in stock for *immediate* delivery. Easy to load, they center the coil automatically, hold it in balanced position. You get easy, smooth unwinding, greater accuracy and higher speeds for both hand and automatic feeding. All three sizes available in single or double Plain Brake or Motor Driven Reels. Write for catalog.

F. J. LITTELL MACHINE CO. Speed with Safety

ROLL FEEDS • COIL CRADLES
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4107 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

Industry News

(*Continued from page 538*)

Ford Booklet Surveys U. S. Highway Problems

There is no master plan that will solve our national highway crisis, according to a 120-page survey of U. S. traffic conditions recently published by the Ford Motor Co.

Titled "Freedom of the American Road," the survey states that a solution of U. S. traffic problems must consist of a series of continuing actions to meet the ever-changing needs of a nation on wheels. Such actions, the survey predicts, will require "new mechanisms of government and new philosophies of business."

Other predictions are: cities will be rebuilt to match the growth of the suburbs; real estate will be more realistically evaluated; and the burden of parking will shift from the public street to private property.

The profusely illustrated survey covers a wide range of topics discussed by persons prominent in highway, traffic and safety agencies, as well as by nationally known writers. Among the contributors are Bernard De Voto, Robert Moses, J. C. Furnas, Finley Peter Dunne, Jr., Henry La Cossitt, and William Laas.

Two-Year Square D Expansion Program to Cost $9 Million

Industrial expansion continues at an unprecedented rate. Square D Co. plans to spend a record $9 million during the next two years on new plants and other improvements.

The expenditure, which is equivalent to the total amount the company spent on new plants in the first 10 postwar years, includes the $3 million allocated for a new plant in Milwaukee, announced previously.

While the company did not name locations of the new plants, it said it will have manufacturing facilities in 11 North American cities and regional assembly plants in six "strategic" market areas when the program is completed.

The expansion will provide an additional 400,000 sq ft of production facilities. At the same time, the company announced that preliminary operations already have been started at its new 60,000 sq ft plant in Royal Oak, Mich., which is designed to supplement output at the Detroit plant.

(*Turn to page 542, please*)

BOSCH
GERMANY

WORLD-FAMOUS MANUFACTURERS
OF HIGH-QUALITY PRECISION PRODUCTS



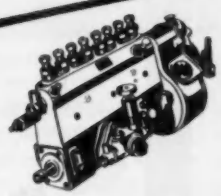
SPARK PLUGS



VOLTAGE REGULATORS



IGNITION COILS



GASOLINE AND
DIESEL INJECTION

and other automotive, electrical and
fuel-injection products

ROBERT BOSCH CORPORATION
268 Fourth Avenue, New York 10, N.Y.
Robert Bosch (Canada) Ltd., 5767 Monkland Ave., Montreal 28, Que.
Sales and Service Representatives for
ROBERT BOSCH GmbH, Stuttgart, Germany

Industry News

(*Continued from page* 540)

Ford Distributes Entry Blanks For Annual Craftsmen Contest

Distribution of entry blanks for Ford's Industrial Arts Awards competition has begun. Now in its seventh year, the IAA program, designed to encourage craftsmanship among high school youth, will include some $50,000 in awards for outstanding projects.

Champion Sponsors Highway Safety Program For Youth

Champion Spark Plug Co. has hired several of the country's top race drivers to instruct teen-age drivers in safer operation and maintenance of their automobiles. The program consists basically of relating the safety practices used on race tracks and how they can be adapted to highway conditions. It will be presented to students at high schools in the form of motion pictures, driver-training classes, and visual safety inspections of cars.





EARTH-EATING SHOVEL

Ninety tons of earth in one tremendous bit is the capacity of this gigantic power shovel. Built by Marion Power Shovel Co., it is extensively equipped with Timken tapered roller bearings in hoist sheaves, swinging machinery, and maintenance cranes. To be used in a strip mine operation in southern Ohio by the Hanna Coal Co., the shovel has a small elevator to transport the operator and maintenance men up to the cabin.

GE 1955 Sales Top 1954; New Gains Seen in 1956

General Electric Co. sales in 1955 totaled $3,095,352,063, an increase of five per cent over sales in 1954. Earnings were $200,923,835, compared with $198,913,221 in 1954.

GE anticipates even greater sales in 1956. The company bases its optimistic outlook on the steadily expanding national economy and on an increasing backlog of unfilled company orders.

Sales of commercial products in 1955 broke all previous records. These gains were offset somewhat, however, by declining sales of defense products as well as by high costs and the expenses of the concern's expansion program.

GM Motorama Draws Record Attendance

Continued interest in automobile shows is illustrated in a report which shows that more than 723,000 persons attended the GM Motorama during its visits to New York and Miami. The show closed its nine-day Miami showing with a record attendance of 448,405, considerably higher than the previous peak attendance of 364,073 last year.

In New York, where the show made its debut, the Motorama attracted more than 275,000 persons.

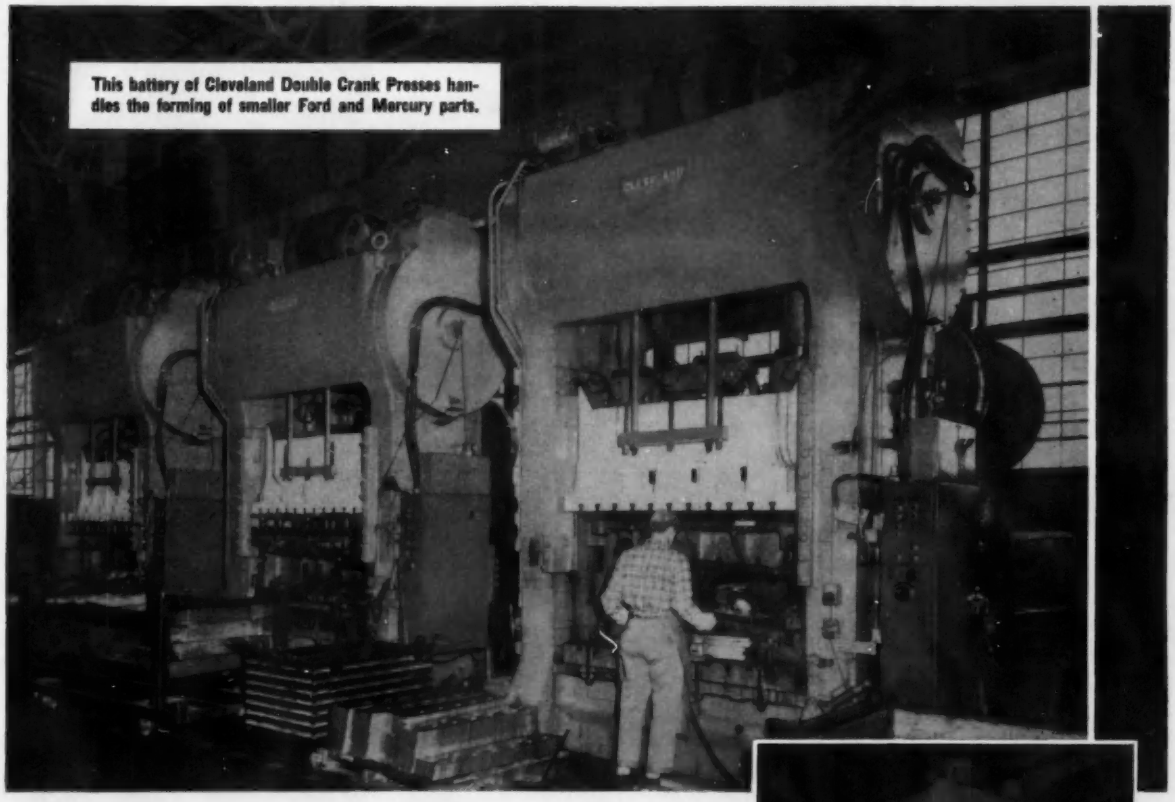
(*Turn to page* 544, *please*)

CLEVELAND PRESSES

help Ford produce 120 carloads of stampings daily



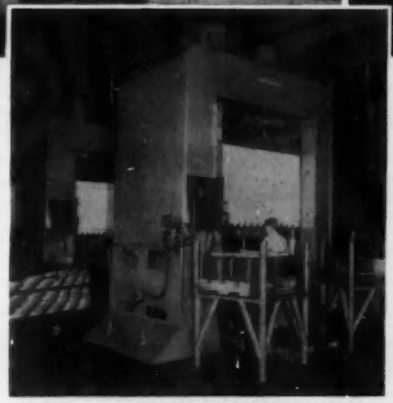
Ford's Cleveland Stamping Plant.



This battery of Cleveland Double Crank Presses handles the forming of smaller Ford and Mercury parts.

Since its completion in August of 1954 Ford's Cleveland Stamping plant has been producing Ford, Mercury and Lincoln parts at the rate of 120 carloads a day. Continuous part flow is essential to meet Ford's exactly scheduled assembly lines.

If you're interested in improving your stamping production be sure to check the many advantages designed into each of the 11 specialized types of Cleveland Presses. You'll find that new Cleveland Presses designed to your specific requirements will give you lower operating costs for greater profits. Write or call today.



Two Cleveland 450 ton Underdrive Presses head the production line forming Ford package trays.

THE CLEVELAND PUNCH & SHEAR WORKS CO.

Established 1880

POWER PRESSES – FABRICATING TOOLS

E. 40th & St. Clair Avenue, Cleveland 14, Ohio

Offices at: NEW YORK • CHICAGO • DETROIT
PHILADELPHIA • E. LANSING

CITY FOUNDRY DIVISION · SMALL TOOL DEPARTMENT

Now!
PRECISION EXPANDING MANDRELS
by
CHAMPION



The expanding sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand—no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 9½" diameter. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diameter.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

Manufactured by
WESTERN TOOL & MFG. CO., Inc.

Sold by:

PATTON
MANUFACTURING CO., INC.
1802 West Pleasant St.
Springfield, Ohio

Industry News

(*Continued from page* 542)

Can SUP Plan Be Scrapped? Opponents Spark New Drive

With only a few months remaining before the supplemental unemployment payment plan scheduled to become official, new suggestions are being made to revise the program. At least two attempts have been started to ban SUP altogether.

Some changes in the original program negotiated by automobile companies and the UAW last summer are still possible. Whether the plan can be scrapped altogether is a legal question.

Automobile companies themselves already have refused to go along with a campaign launched several weeks ago by a newly formed group known as the Michigan Information Committee. Its basic objections to the plan are that it destroys the incentive of an unemployed person to seek new work and imposes an additional cost burden on smaller companies.

A similar move is underway in Illinois, where a committee representing five major employer groups lists eight main objections to the SUP plan. Foremost among them is a protest that it would be contrary to law.

Both the Michigan and Illinois groups are similar to one which led a successful fight to ban integration of company and state benefits in Ohio last year. SUP already has been affirmed by legislatures in six states, including Michigan. The Michigan group has indicated it will fight the plan in the legislature.

The UAW plans to circumvent the new Ohio law through a technicality which opponents apparently overlooked when they placed the issue on voter ballots. Although company and state payments cannot be made concurrently to unemployed persons at present in Ohio, a worker can collect any SUP payments due him when he returns to work or after his state benefits are exhausted.

Automobile Credit Up By Nearly $4 Billion

Automobile instalment credit stood at $14.3 billion at the end of last year, nearly $4 billion higher than at the same time a year earlier. Other consumer credit outstanding rose to $27.8 billion, about $5.4 billion above 1954.

(*Turn to page* 554, *please*)

Keep your floors
FREE of SLIPPERY OIL SPOTS



with
Oil-Dri®
ABSORBENTS

the modern, economical oil and grease absorbents that keep your floors dry, clean and safe, and reduce maintenance costs.

WRITE TODAY FOR FREE 60-SECOND DEMONSTRATION

Now Available!



Handy
OIL-DRI
DISPENSER

Located on spot where needed. Slot-type release automatically delivers absorbents to floor of dispenser. Easy to dispense with shovel — no waste — saves time — saves money!

AVAILABLE AT YOUR WHOLESALER

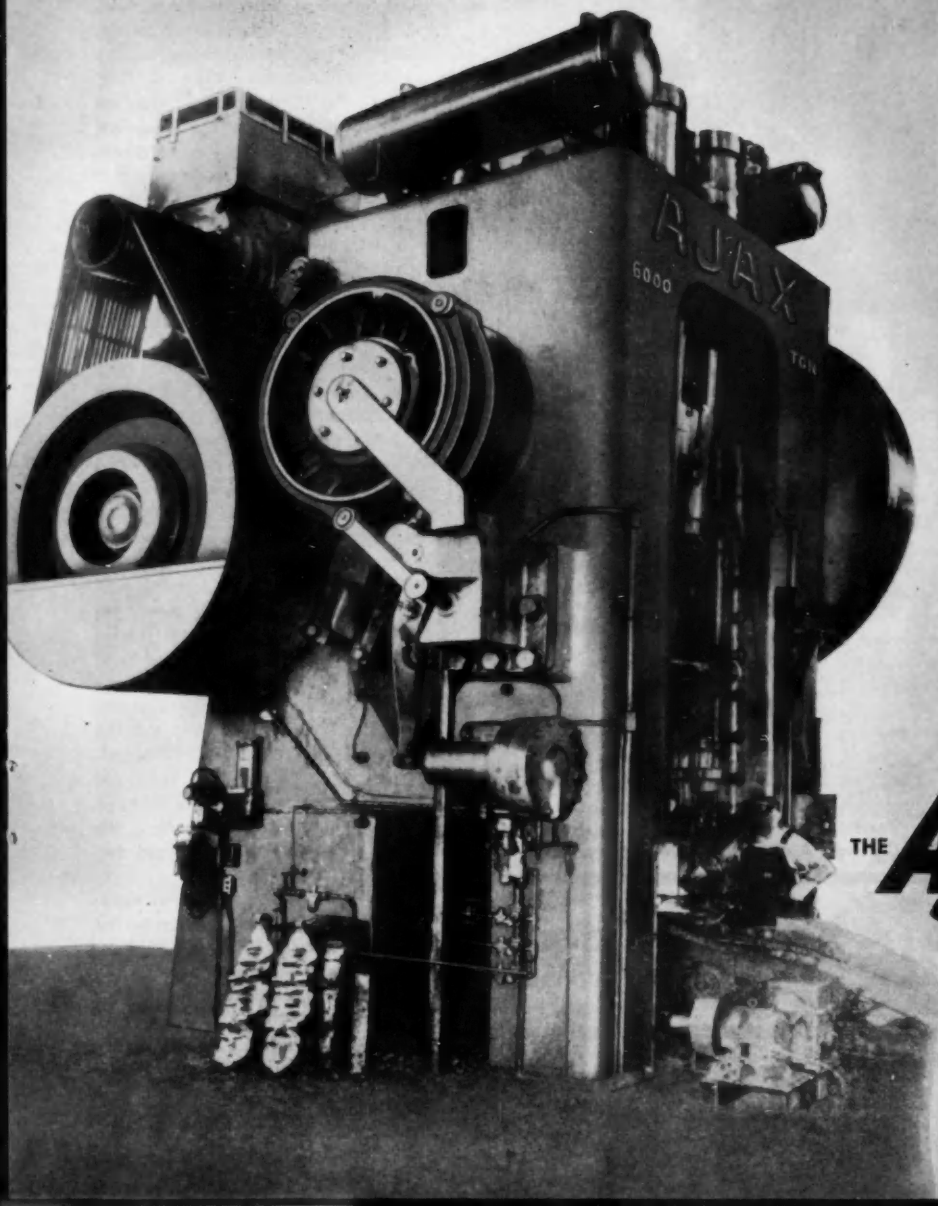
Oil-Dri CORPORATION OF AMERICA
520 North Michigan Avenue
Chicago 11, Illinois

High Production of Automobile Crankshaft Forgings on AJAX *High Speed* Forging Presses

Production
More than Doubled
Over Former Methods
on 6000 Ton
Ajax Forging Presses

Crankshafts
With Less Draft
on Counterweights
for Lower Machining
Costs

For Your
Forging Needs . . .
Ajax Forging Presses
Sizes 300 Ton
to 8000 Ton



THE **Ajax** MANUFACTURING COMPANY
CLEVELAND 17, OHIO

110 S. DEARBORN ST., CHICAGO, ILL.

W. P. WOOLDRIDGE CO.
1209 BURLINGAME AVE., BURLINGAME, CAL.
6440 FLEET ST., LOS ANGELES 22, CAL.

Write for Bulletin 75 C

Need for Still Better Lubricants Foreseen at API Meeting

WHAT distinguishes the annual Detroit meeting of the API Marketing Division from most technical meetings is the freedom of expression and criticism which are so essential to progress in the automotive field. The seventh annual meeting held last month was no exception in covering some controversial matters described objectively in this report.

In a well documented report "Why Better Lubricants" Charles M. Heinen, Chrysler Corp., explained that further improvements in gear lubricants are urgently required. It was not a criticism of what has been done by the oil industry. What he implied, briefly, was that the demand for more performance, the demand for added accessories, and the trend to inceased cold weather usage are placing added responsibilities on the motor car producers as well as the petroleum industry and must be met by improved lubricants of various kinds. As a result, he asked for improvement in the following areas: greater fluidity at lower temperatures; increased resistance to heat; greater load-carrying ability; and compatibility with rubber and other materials.

The major part of the discussion was concerned with lubricating materials for automatic transmissions and power steering gear, rear axle fluids, and brake fluids.

Despite the rigidity of current SAE standards, Heinen mentioned that at least three types of transmission fluids are in the picture: Type A, recognized by the SAE; Type B, a generic term to designate any modification of Type A which can be used by a particular manufacturer for factory fill at a cost saving, and the controversial Type C, specified by Allison and others for the most severe heavy duty services.

While Heinen finds evidence that Type A fluid will continue as a service station fluid, he recommends some essential modifications even if they imply somewhat higher cost to the customer. These include the following elements: reduction in low temperature drag; ability to handle higher temperatures—at least 350 F; possibility of increasing specific gravity to aid in reducing torque converter size; compatibility with rubbers; and higher E-P characteristics.

Heinen criticized what he considers to be shortcomings of present day brake fluids. Higher performance cars and the consequent demand for higher deceleration rates as well as the probability of going to still smaller wheels will create further increases in temperature in the brake system. According to some recent test results, one may expect wheel cylinder temperatures to be in the region of at least 280 F.

An evaluation of fuel octane requirements for current and future high compression engines was presented by R. I. Potter, Ford Motor Co. On the basis of figures available at this time, Potter estimated that the country consumed some 56-billion gallons of fuel last year. He then described some extensive testing by Ford engineering to determine where we are and what is needed to feed the new engines.

To arrive at some comparative data, Ford engineering sometime ago tested a group of 15 vehicles, using 1951 L-head V-8 engines, rated 110-hp. The engines were selected at random from the assembly line to get some measure of sampling. Octane requirements were found by running the vehicles

CUT COSTS . . . FASTEN "ON THE DOUBLE"
with the
Chicago "214" DOUBLE RIVET SETTER



The "214" automatically feeds, inserts and clinches two rivets at a time... with speed that may mean a big saving in your fastening costs.

14" throat makes large assemblies easy to handle. For up to 9/64" diameter steel tubular rivets—lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG
contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

Chicago Rivet & MACHINE CO.
9612 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

Can I afford a Towmotor?



You can! Typical savings produced by Towmotor Fork Lift Trucks are revealed in recent Certified Job Studies which show that: For one company, one Towmotor Fork Lift Truck paid for itself in 10 months. For another company, six Towmotor units saved $50,000 in a single year.

It's an amazing fact that most companies now using outdated materials handling methods are, through hidden costs, already paying the price of Towmotor equipment. To discover how you can save money on your materials handling, call your Towmotor representative today! . . . or write for Certified Job Studies covering your industry. TOWMOTOR CORPORATION, Div. 4503, 1226 E. 152nd St., Cleveland 10, Ohio.



Read how an Automobile Plant speeds handling time 30-40%. Ask for Job Study #158

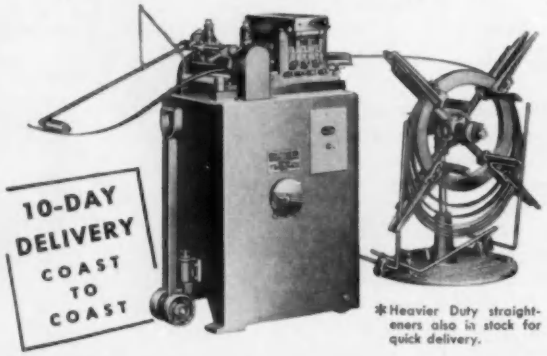
THERE'S ONLY ONE FORK LIFT TRUCK CALLED TOWMOTOR

America's ***best engineered*** *fork lift truck*

TOWMOTOR
THE ONE-MAN-GANG ®

See the TOWMOTOR EXHIBIT Cleveland Auditorium - June 5-8

STRAIGHTEN COIL STOCK
from ½" to 8" wide...
from .018" to .065" thick...
on a LITTELL "308"*



10-DAY DELIVERY COAST TO COAST

*Heavier Duty straighteners also in stock for quick delivery.

Littell "308" Variable Speed Straighteners flatten coil stock...synchronize feeding of stock with speeds of automatic presses . . . simplify hand feeding. The "308" has brought new speed, efficiency and economy into stamping, blanking and shearing operations from coast to coast. Get full details on these portable straighteners.

Write for Catalog Section 3H

F. J. LITTELL MACHINE CO.
Speed with Safety

ROLL FEEDS • COIL CRADLES
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland

4107 N. RAVENSWOOD AVE. • CHICAGO 13, ILL.

GET MORE OUT OF ANY MACHINE



BY USING JONES TACHOMETERS

CHECKS SPEED *Periodically*

SHOWS SPEED *Continuously*

How can you get the most from your machinery without sacrificing the quality of your product? A **JONES TACHOMETER** will give you the answer in RPM's, FPM's, etc. JONES TACHOMETERS are used widely in every type of industry to check and maintain best performance of operating equipment. Both Portable (as illustrated) and permanently installed types are available at surprisingly moderate cost.

• ***WRITE FOR BULLETIN 146-G*** •

JONES MOTROLA CORP.
Stamford, Conn.

clean and in periods of 3000 miles, up to 9000 miles. Objective was to determine what the production octane requirements were and whether the change in octane requirements was due to wear or deposit accumulation. His report indicates that ultimately it was found that wear is not a factor.

It was noted that "clean" requirements ran from 70 to 77.5 octane numbers, with average clean requirement of 72.7. After these engines were driven 3000 miles the range in octane requirements was found to be 74.5-80.0, with an average of 76.8, giving an increase of 4.1 octane numbers. After 6000 miles, the average increase was 7.6; after 9000 miles, the average increase had risen to nine octane numbers above that for clean engines.

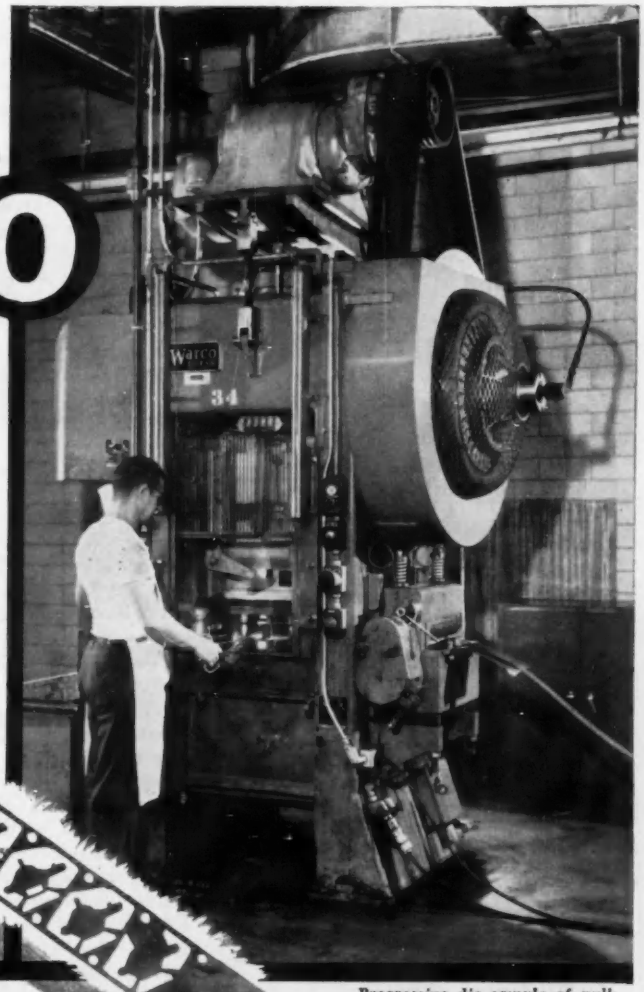
These results then were compared recently with similar tests using 1955 valve-in-head Ford V-8 engines, rated 162-hp. Although the latter test is still in progress, the following significant results already have been evaluated. Clean requirements range 80-88 octane numbers, with an average of 84.6. After 3000 miles the range had risen to 83-91, with an average value of 88.5, and an increase of 3.9 numbers. After 6000 miles, the average octane requirement remained steady at 88.5. After 9000 miles on 10 vehicles, the average octane requirement rose only to 88.8, an increase of but 4.2 numbers above the "clean" requirement.

In comparing the results, Potter stresses some of the accomplishments of engine designers. First of all, despite production variations, there is a spread of only five octane numbers in the requirement of mass produced engines. Of interest too is the fact that octane requirement increase for 1955 Ford engines was only four numbers after 9000 miles of operation.

Another paper on fuel quality was presented by J. K. Appledoorn, Esso Research and Engineering Co., dealing with some new test work now under way to determine the effect of increasing compression ratio—expected to attain 12 to 1 in five years—on octane requirements. In his opinion combustion chamber deposits constitute the major problem with higher compression ratios and have an increasing effect on engine noise.

There is likely to be more self-ignition trouble with deposits due to the effects of glowing. At this point Appledoorn warned against the use of additives to promote non-glowing deposits, warning that the normal mechanism in glowing deposits is to burn off some of the deposit whereas the non-glow-

How Warco® PRESSES help Kodak make precision cameras





Progressive die sample of pull-down claws for Kodak's Cine-Kodak Medallion 8 Camera. Warco Press produces about 6,000 per hour.

For the past eight years, Eastman Kodak Company has been using Warco Presses to stamp out many of the components used in their popular camera line. From time to time, as production demanded, Kodak has added to its Warco equipment and has found it met specifications right down the line. The 75-ton High Speed press, above, is typical of the Warco equipment. Feeding directly from coil stock through progressive dies they blank, perforate, form and emboss. The press operates at speeds up to 100 strokes per minute, turning out as many as 6,000 completed pieces every hour.

You'll find more and more Warco Presses operating in plants, like Eastman Kodak where quality and long, trouble-free service are appreciated. *The Federal Machine and Welder Co., Warren, Ohio.*



Cine-Kodak Medallion 8



Brownie Holiday Flash



Brownie Hawkeye

9872

Federal WELDERS®

Warco PRESSES®

The Federal Machine and Welder Company

WARREN, OHIO

SERV-RITE

Insulated Thermocouple Wire Extension Lead Wire

FOR

PLATINUM COUPLES
CHROMEL ALUMEL
IRON CONSTANTAN
COPPER CONSTANTAN
IRON CUPRONEL

No matter what your wire or insulation requirements may be, you can depend on Gordon "Serv-Rite" insulated wire for pyrometers—recognized as a standard of highest quality for nearly half a century. All "Serv-Rite" wire is now manufactured in the new, completely modern Gordon plant, employing up-to-date equipment and machinery, supervised and operated by skilled technicians—your guarantee of continued precision quality. In addition to maintaining large stocks of all common types of wire, Gordon will manufacture special insulation, in long or short runs, to suit your individual needs and meet your most rigid specifications.

All Types of Insulation

Felted Asbestos
Asbestos Braid
Weatherproof Braid
Glass Braid
Polyvinyl Plastic
Nylon Braid
Stainless Steel Armored Braid
Silicone Treated
Cotton Braid
Lead Jacket

Ask for Bulletin No. 1200 for Application Data and Complete Specifications on Thermocouple and Extension Wire

5404

GORDON SERVICE

CLAUD S. GORDON CO.

Manufacturers & Distributors

Thermocouple Supplies • Industrial Furnaces & Ovens
Pyrometers & Controls • Metallurgical Testing Machines
601 West 30th Street, Chicago 16, Illinois
2037 Hamilton Avenue, Cleveland 14, Ohio

ing type builds up a thicker deposit.

Unique engine design, in his opinion, has as much effect as do fuels and lubricants insofar as deposits are concerned. Some engines have smaller deposition rates than others, leading to the conclusion that something, which might be termed "digestion" for a given make of engine, is the determinisg factor.

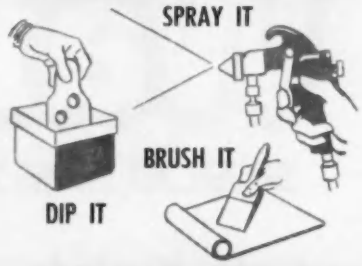
Perhaps the most biting criticism came from Dr. L. L. Withrow, General Motors Research. Vigorously condemning what he termed the "extravagant advertising claims" for certain makes of multi-purpose engine lubricants, Withrow drew attention to the skepticism engendered in the minds of engine designers and said emphatically that unless multi-vis lubes are improved drastically none of the GM divisions would approve their use.

GMR decided some time ago that the best way to check on these claims was to find out what engines thought about them. GMR consumer tests have shown that multi-vis oils have a salutary effect in controlling engine deposits. In fact some recent tests indicate that their use can reduce octane number requirements by as much as 3.5 numbers. This could result in very tangible cost savings to the consumers.

However, some of the other basic claims are not substantiated by engine testing. For example, some engines have accumulated valve deposits with multi-vis oils. Another claim is better starting ability. Although there have been no field complaints, an investigation was made of starting ability. It was found immediately that use of the 10W-30 grade resulted in a slower starter speed than with 10W oil at zero F. This led to some further questioning. For one thing, it was reasoned that freedom from complaints on this score might be attributed simply to the fact that current engines all have 12-volt electrical systems with their higher speed and more powerful starting motors. But what was the nature of the discrepency?

Further work in the chemical laboratories disclosed that the SAE chart method of rating viscosity, using extrapolation, was seriously at fault. Actual measurement of viscosity at zero F and sub-zero temperatures showed that SAE extrapolation procedure is correct only in the case of a 10W and completely out of line for multi-vis. If this is indeed the case, then it is obvious that something must be done to correct the procedure for making viscosity checks, and it also means that something drastic has to be done to multi-vis lubes to increase

SURF-KOTE
the dry film
LUBRICANT



Easy to apply! Job shops can benefit as well as volume producers



You can greatly increase wear life of moving or rotating metal parts . . . or solve many difficult lubrication problems . . . with Surf-Kote. It prevents metal-to-metal contact, provides low coefficient of sliding friction, and has outstanding anti-galling and seizing properties.

Coating parts with Surf-Kote is particularly advantageous where conventional methods of lubrication are impractical because of inaccessibility, presence of steam, water or dust, high pressures and extremes of temperature. Surf-Kote is also used as a "break-in" lubricant, and in conjunction with other lubricants as a means to conserve power, lengthen machine life and reduce maintenance.

No special equipment needed

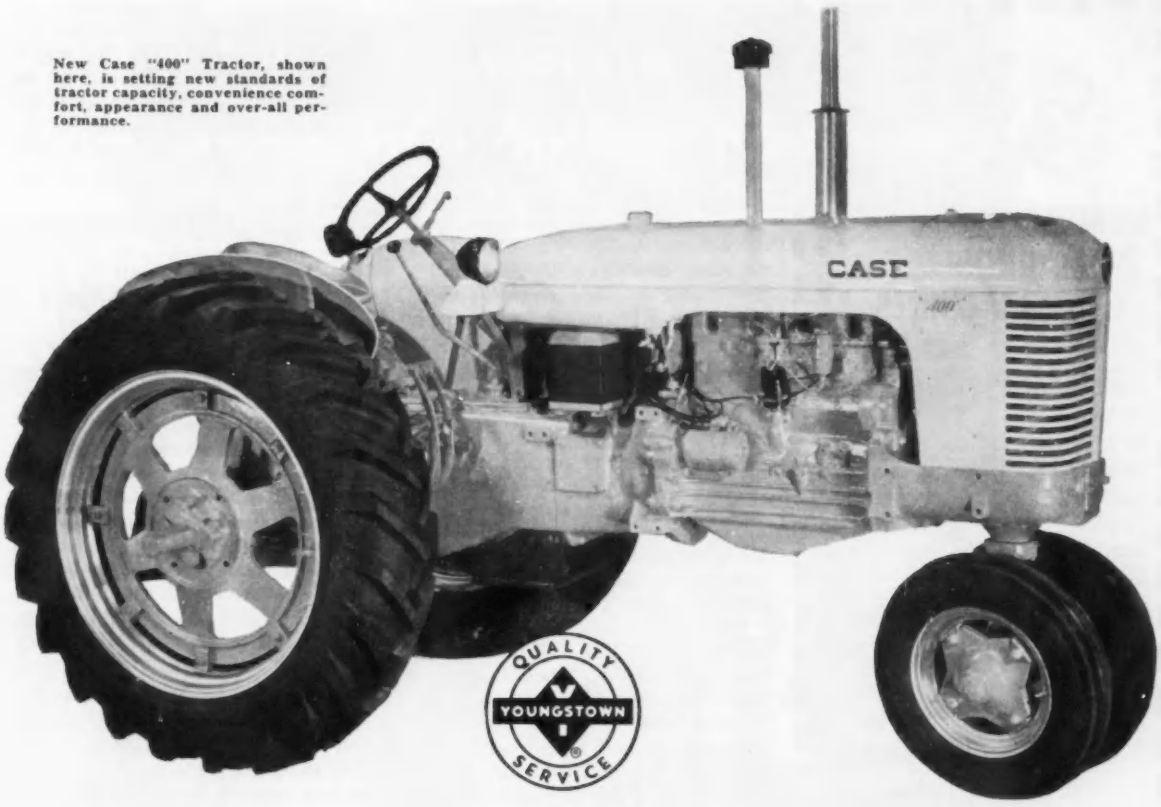
Surf-Kote is easy to apply by spraying, dipping or hand brushing, followed by baking to cure the resinous binder. The result is a hard, continuous inorganic film with long-lasting characteristics. Equipment generally available in paint departments may be utilized. Baking can be done by conduction, convection, infrared or high frequency methods. Or, even a blow torch may be used for hand curing.

Write for free folder "Solid Lubricants Might Be the Only Answer"; also Surf-Kote data sheets and sample coated parts.

HOHMAN PLATING & MFG., INC.
810 Vermont Ave., Dayton 4, Ohio

HOHMAN

New Case "400" Tractor, shown here, is setting new standards of tractor capacity, convenience comfort, appearance and over-all performance.



Many parts of YOUNGSTOWN Steel go to make Case's "new from ground up" 400 Tractor

Not often does a farm equipment manufacturer create an entirely new tractor. Such a change is costly—both in time and in tooling costs. But, the J. I. Case Company of Racine, Wisconsin, did it with the Case "400" Tractor.

Another thing that Case did was to make sure that the "400" would be a quality product. That's why parts such as 4th and 8th speed gear seat reinforcement, rear axle shaft, differential shaft, reverse idler gear, front wheel spindle and many others are of Youngstown Steel. These parts utilize 5 different Youngstown Steel products: Hot Rolled Alloy Bars, Hot Rolled Carbon Bars, Hot Rolled Sheets, Cold Rolled Sheets and Standard Black Pipe.

In all Youngstown Steel products, you will find the same dependable uniformity, because Youngstown controls the complete manufacture from start to finish, with emphasis on quality throughout.

Let Youngstown help you with your steel problems. For information and service, get in touch with the local Youngstown distributor—or phone our nearest district sales office.

Youngstown

THE YOUNGSTOWN SHEET AND TUBE COMPANY *Manufacturers of Carbon, Alloy and Yoloy Steel*

General Offices Youngstown, Ohio District Sales Offices in Principal Cities.

SHEETS - STRIP - PLATES - STANDARD PIPE - LINE PIPE - OIL COUNTRY TUBULAR GOODS - CONDUIT AND EMT - MECHANICAL TUBING - COLD FINISHED BARS - HOT ROLLED BARS - WIRE - HOT ROLLED RODS - COKE TIN PLATE - ELECTROLYTIC TIN PLATE - BLACK PLATE - RAILROAD TRACK SPIKES - MINE ROOF BOLTS



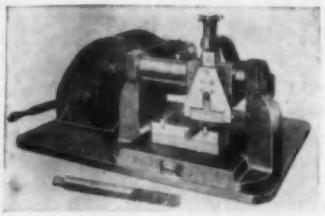
NUMBERS
LETTERS
DESIGN

When you need
NUMBERING and
MARKING
MACHINES
and TOOLS

be sure and get strong ones that will take the heavy blows needed to mark STEEL, Stainless Steel, Alloys, Cast Iron and the many other metals used today.



ACROMARK HEAVY DUTY NUMBERING HEADS are made to number by hand or power—anything from railroad track to name-plates.



ACROMARK Model 9AM MARKING MACHINES use round dies to mark flat parts and flat dies to mark round parts. This rotary marking principle provides fast, quiet marking at lowest cost per mark.



Write for latest catalog of marking and numbering machines, also try our steel stamps and name-plates.

The ACROMARK Company

303 Morrell St., Elizabeth 4, N. J.

"The Original Marking Specialists"

their fluidity at low temperatures.

The headaches of the suppliers of engine lubricants were placed in focus by M. L. Hamilton, Sinclair Research Laboratories. Most troublesome is that we are in an era of engine design flux with many new types of engines making their appearance. Even more disturbing is the fact that all new engines are developed in secret and those outside the fold have no opportunity to study their characteristics until a new model is ready for announcement. By the time the oil company can get information the engine is already in the hands of the public and a flood of complaints may already be on file.

It boils down to the fact, said Hamilton, that each oil company may be forced each year to establish or check the suitability of its lubes in a number of new engines. When these tests or when complaints from the field prove an oil to be inadequate, then the research laboratory will have to come into the picture to isolate the trouble.

But this is a time-consuming procedure. It will not help to solve the immediate problem. What, then, is the logical solution? It is that some way must be found to effect a cooperative approach that will make available the improved oils before a new engine reaches the public. It means that test development and evaluation equipment should be made available to the motor oil researcher before the engine is ready for production. The author then suggested the possibility of developing some technique by which the engine designer can convey to the motor oil designer the requirements of a motor oil that will suit the new engine.

At this point it is of interest to comment on a discussion of gear lubricants by C. R. Noll, Gulf Oil Corp. Pointing out that higher performance means still more demand on rear axle lubricants, Noll went on to discuss the complications of the present situation, summarizing as follows:

1. Presently available multi-purpose gear lubricants are not satisfactory to many manufacturers either for initial factory fill or replacement.

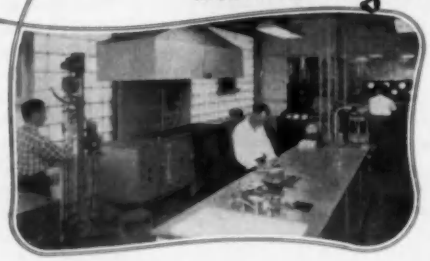
2. Improvement in rear axle lubes will be mandatory in the immediate future if motor cars are to be serviced satisfactorily in the field.

3. New and improved additives have been promised which will apparently fulfill all requirements for present models and those anticipated in the next few years. The resulting lubricants probably will cost more.

4. Prospects for general agreement on high speed requirements seem more encouraging at this time.

Here's What

DEVELOPED BY
GOSHEN RUBBER
means to you...



When you specify rubber products "developed by Goshen" the finest laboratory facilities and technical know-how provide the exact compound and the precision fabrication your problem demands. Consultation in design stage is always welcome.



Over 40th year 1916 - 1956

Send for FREE, 8-page brochure—tells how Goshen Rubber can help you.

Goshen Rubber Co. INC.

CUSTOM DEVELOPMENT AND FABRICATION SINCE 1916

2736 S. TENTH ST. GOSHEN, IND.

These Achievements are Goshen Rubber Exclusives

GORSYN
Synthetic rubbers (not silicones) that remain flexible in temperature ranges of —65°F to +300°F; and —20°F to +400°F.

GORLUBE
Low-friction treatment, for O-rings and parts made of natural, synthetic, and silicone rubbers.

GORBOND
Process for securely bonding rubber parts to metals of most every kind.

TETRASEAL
A precision-cut, rectangular-section static seal. Interchangeable with standard O-rings.

See our catalog in Sweet's Product Design File.

dixi 60

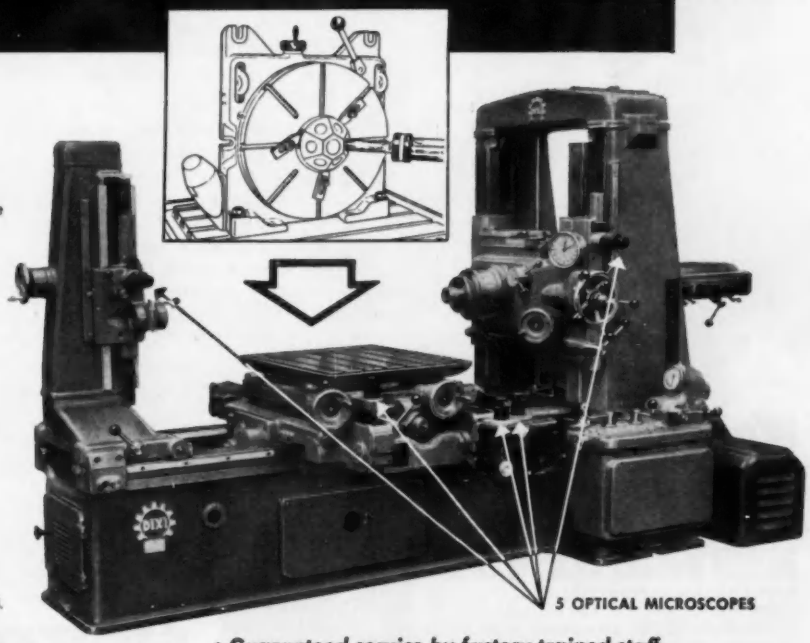
horizontal optical jig borer

with 5 optical microscopes

DESIGNED AND BUILT FOR:

VERSATILITY
Optical settings for operations in all planes and compound angles . . . Equally suitable for tooling, short-run or production work . . .

ACCURACY
Overall accuracy of .0002"



5 OPTICAL MICROSCOPES

A precision machine for *JIGLESS* boring, facing, milling, and drilling work, in all planes. Built-in 360° optical rotary table, 28¾" x 32⅝". All spindle and table settings by optical microscopes. Infinitely variable hydraulic feeds. Mechanical spindle feeds with automatic depth stop. #40 taper spindle-speeds infinitely variable to 1400 R.P.M. Special features eliminate effect of spindle overhang on accuracy.

DIXI 450 PRECISION OPTICAL CIRCULAR DIVIDING TABLE

Direct readings of 1 sec.

(See insert picture above) rigidly mounted (not tilting) on built-in rotary table permits holding close tolerance relations between bores in all planes, including bores at compound angles. ALL IN ONE SET-UP. All sides of the work piece except the mounting face machined in one set-up.

- ***Guaranteed service by factory trained staff***
- ***Engineering staff available for consultation***
- ***Spare Parts in New York stock***
- ***Your operators trained***

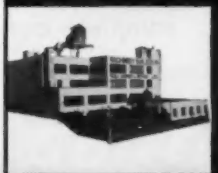
DIXI 60 now in wide use in leading Aircraft and Manufacturing Plants throughout the United States.

Names available upon request.

SEE THIS VERSATILE MACHINE IN OPERATION

at our New York or Cleveland Show Rooms. Write for Complete descriptive literature and prices to Department 21. Catalogues on additional production equipment also available on request.

MBI



Our Headquarters in New York City

M.B.I.

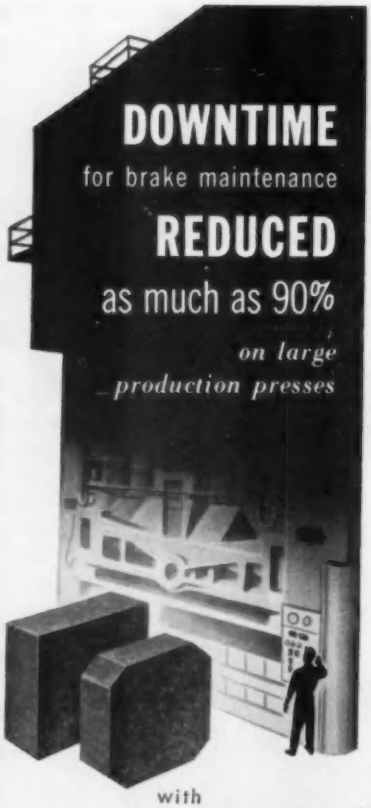
export & import ltd.

A Division of Machinery Builders, Inc.

475 Grand Concourse, Bronx 51, N. Y.

"Over 20 years experience in designing & building machinery"

Phone: MOtt Haven 5-0900



with

WORLD BESTOS

RED BLOCK

combination

On huge hydraulic presses in a well-known automotive body plant, World Bestos brake blocks in the RED BLOCK Combination reduce downtime for brake maintenance as much as 90%—they outlast blocks previously used as much as 10 to 1!

Guaranteed NO-FADE Performance

World Bestos RED BLOCK Combination reduces glaze, eliminates "fading"; assures full friction at high temperatures.

Find out how you can save time and money in your own production processes!

RED BLOCK'S dependable, trouble-free performance and longer wear pay big dividends. Write today for complete information on World Bestos RED BLOCK Combination for industrial brakes in your plant.

WORLD BESTOS

NEW CASTLE, INDIANA

DIVISION OF THE

Firestone

TIRE & RUBBER CO.

Industry News

(*Continued from page* 544)

Four-Door Hardtop Sales Threaten Two-Door Units

An increase in orders for four-door hardtops is causing some automobile factory sales officials to wonder about ultimate fate of the two-door hardtop. Possessing the same basic advantages as the two-door, four-door hardtops may take over the bulk of the market in much the same way that they did in the regular sedan lines.

AMA Packaging Exposition To Draw Numerous Visitors

Some 30,000 executives from more than 9000 different companies are expected to be on hand at the Silver Anniversary Packaging Exposition of the American Management Association. The event is scheduled to be held at Convention Hall in Atlantic City, N. J., from April 9 to 12. A sizable attendance also is expected at the accompanying AMA Packaging Conference.

The exposition will provide a panorama of progress in packaging to reflect the growth of the field over the past 25 years to a better than $10-billion-a-year industry and the corresponding growth of the show. Speakers at the conference will report on the newest developments in packaging machinery, materials, and methods.

Vehicle Sales in Canada Reach New High in 1955

Canadian sales of new motor vehicles in 1955 reached an all-time high in totaling 465,629 units. The total compares with 382,628 units sold in 1954.

Passenger car sales numbered 386,937 units, as compared to 310,546 in 1954. Commercial new vehicle sales in 1955 were 78,692 units, compared to 72,082 units in 1954.

February New Car Sales Exceed Previous Month's

New car sales, after a slow start this year, began to climb last month (Feb.). Latest information indicates that the February total may top January by more than five per cent. Although the February total will probably still be nearly 10 per cent under

one source

with years of experience,

proven ability

and adequate facilities

to handle your

complete automation program.

serving industry since 1931

Pioneer ENGINEERING & MANUFACTURING CO., INC.

Telephone - TWinbrook 3-4500

19675 JOHN R STREET, DETROIT 3, MICH.

Now... Gorton Milling Machines Feature Hydraulic 3-Dimensional Controls



"Pencil Pressure" Does the Work

Gorton now offers you several models of Super-Speed Vertical Mills equipped with sensitive and accurate hydraulic controls featuring feeds up to 40 inches per minute.

AVAILABLE 3 WAYS

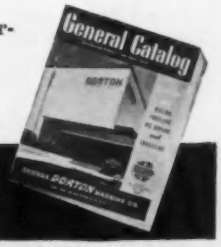
1. **Vertical action only**
2. **Cross and longitudinal**
3. **Three-dimensional combination**

Gorton Milling Machines with hydraulic Tracer Control must be ordered as such. Hydraulic equipment is not an attachment but a permanent installation.

For die or mold work (single or multiple units), production profiling and duplicating — short runs, experimental pieces or high production.

Gorton also offers manual and automatic Tracer-Controlled Milling Machines and Pantographs for 2- or 3-dimensional operation; 1 to 1 ratio, or reproduction at variable reductions, with single or multiple-spindle machines for work of any shape or size.

Shown above: Gorton 9-J Super-Speed Vertical Mill with True-Trace hydraulic installation.



Write for Form 2697-ADS and 1003-1655 General Catalog

GORTON

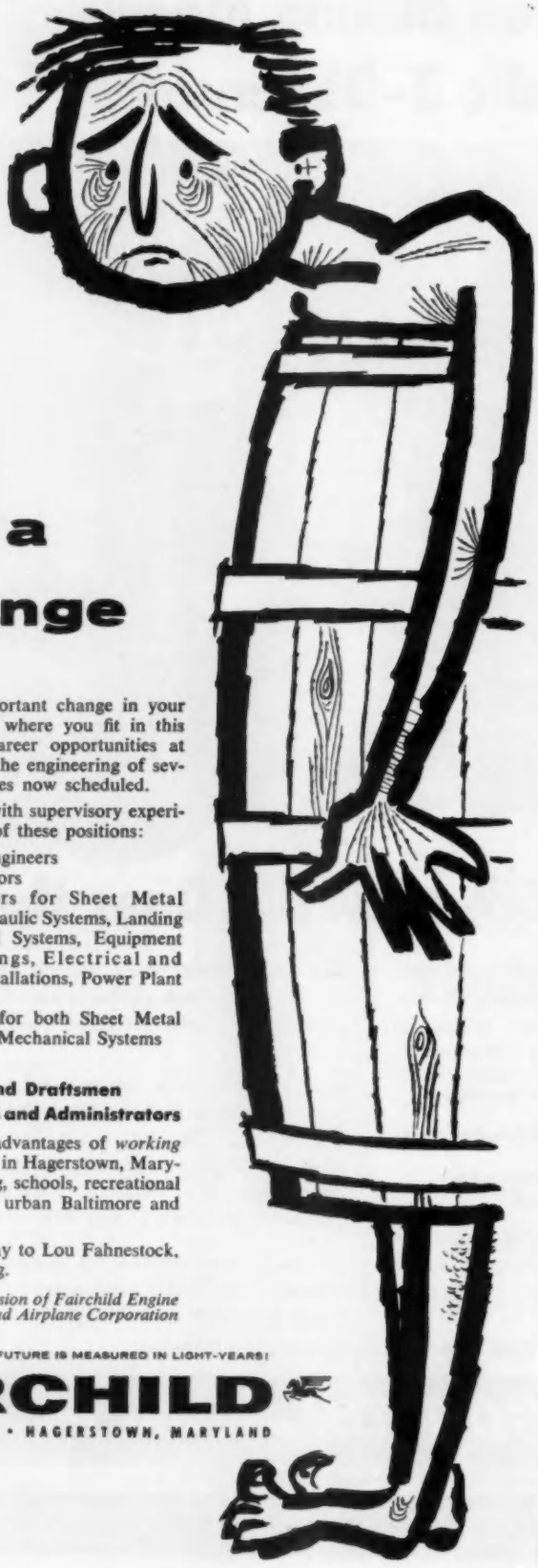
GEORGE GORTON MACHINE CO.

1003 Racine St. Racine, Wisconsin, U. S. A.

SINCE 1893

Tracer-Controlled Pantographs, Duplicators — standard and special . . . Horizontal and Vertical Mills, Swiss-Type Screw Machines, Tool Grinders, Small Tools and Accessories.

A 8731-1P



time for a change

Bring about that important change in your working climate. See where you fit in this list of outstanding career opportunities at Fairchild to assist in the engineering of several airplane prototypes now scheduled.

Aircraft Engineers with supervisory experience in one or more of these positions:

- Design Project Engineers
- Design Coordinators
- Design Engineers for Sheet Metal Structure, Hydraulic Systems, Landing Gears, Control Systems, Equipment and Furnishings, Electrical and Electronics Installations, Power Plant Installations
- Stress Engineers for both Sheet Metal Structures and Mechanical Systems
- Weight Control

Layout Designers and Draftsmen

Project Coordinators and Administrators

Investigate the many advantages of *working* at Fairchild, and *living* in Hagerstown, Maryland—excellent housing, schools, recreational facilities . . . close to urban Baltimore and Washington.

Send your resume today to Lou Fahnestock, Director of Engineering.

A Division of Fairchild Engine and Airplane Corporation

. . . WHERE THE FUTURE IS MEASURED IN LIGHT-YEARS!

FAIRCHILD

AIRCRAFT DIVISION • HAGERSTOWN, MARYLAND

the record number of cars sold in February of 1954, sales during the first quarter are expected to be the second highest on record.

However, a sizable backlog of field stocks estimated at more than 800,000 units at the end of February, still exists. Lower production rates for some weeks until stocks can be pared closer to normal levels is thus indicated.

Contract Changes Put Dealers In Better Financial Position

Recent sweeping changes in car dealer franchises were made basically to give dealers a better profit position and to offset discounting. It remains to be seen whether dealers will retain the wider margin resulting from economic gains or trade it away to meet competition.

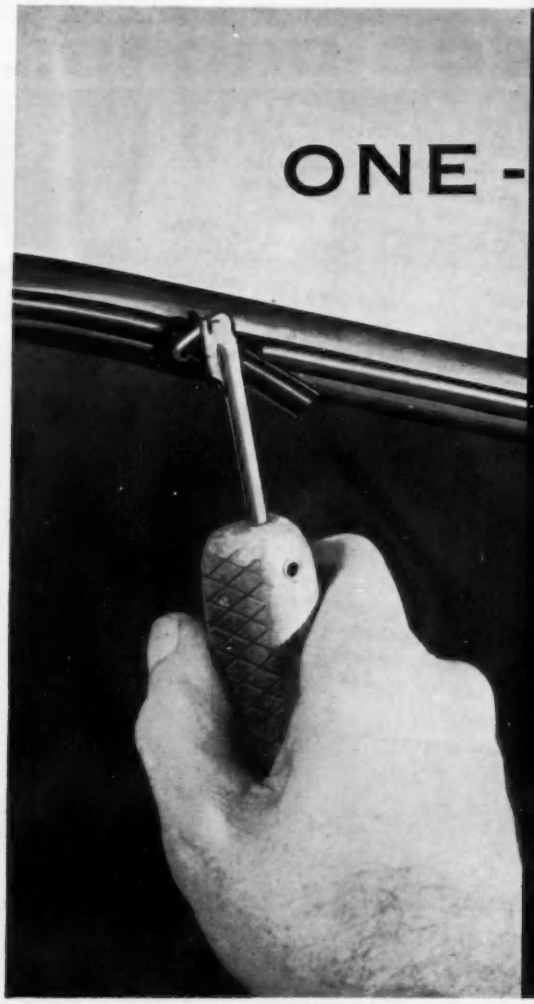
The net result of some concessions made by factories recently, is to lower the dealer's operating costs through elimination of direct mail charges, greater obsolescence allowances, lower advertising charges, 100 per cent warranty recovery, etc. Other concessions provide more security for dealer tenure or termination.

Auto-Lite Sales, Earnings Way Up in 1955 Over 1954

Electric Auto-Lite Co. has reported that its 1955 sales reached a record $296,007,212. Earnings amounted to $10,102,060. They compare with sales of $197,048,855 and earnings of $714,184 in 1954.

CORRECTION

In the article on the Omega Engine, published in the January 15 issue of AUTOMOTIVE INDUSTRIES, it was stated on page 55—"Frictional losses resulting from connecting rod side thrust on the pistons are also provided by this construction." The word "provided" was a typographical error. The sentence should have read—"Frictional losses resulting from connecting rod side thrust on the pistons are also avoided by this construction."



ONE-MAN BAND

of protection against leakage!

A one-man operation—whether the band of Inland Self-Sealing Weather Strip is being installed as original equipment . . . or as replacement. It's a quick motion and can be done on the road or in the shop. Windows of any size, any shape can be fitted with Inland Weather Strip—and the magic Filler Strip forms a positive seal against any moisture by putting just the right pressure on the fence and the glass!

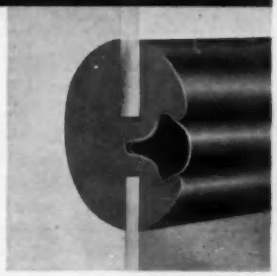
No cement, clamps or binders. No need to plan intricate and expensive mounting surfaces, channels or moldings. It is fast, easy and positive. Installation costs drop—and you can pocket the savings or apply it to other features you'd like incorporated in your project.

INLAND

self-sealing weather strip

(PATENTED)

INLAND MANUFACTURING DIVISION
General Motors Corporation, Dayton, Ohio



a part of the General Motors Master Plan for Greater Highway Safety through Better Engineered Products!

Whatever the DESIGN...

We can make it WATER-TIGHT!



Transportation Industry



Automotive Installations



Railway Equipment



Marine Applications



Over-the-road Equipment



Commercial Structures

THE TREND TO CECO-DROPS...

JAMESTOWN, N. Y.

SITUATION: Growing sales were taxing production capacity of tool mfr's. forge shop. Had four belt-driven board drop hammers.

SOLUTION: Four Ceco-Drops now in operation —have been giving excellent service. Production is up—maintenance is down. "3 hours charged against Ceco-Drops in 42 days" —"One Ceco-Drop ran 108 hrs. (21 days) without maintenance or die work."

FLINT, MICH.

SITUATION: Large Auto Co. with 16 Board Drop Hammers—(7 of them Chambersburg "J's")—ranging in age from 7 to 30 years. Lowered production rates and mounting maintenance costs.

SOLUTION: Started modernization in 1953. Converted* four "J's" with Ceco-Drop upper works. Cost and down time reduced —production up—operators like them. Other "J's" to be converted*. Ceco-Drops will replace older board hammers.

*Saves cost of anvil and foundation!

ALLENTOWN, PA.

SITUATION: Tool works had the problem of keeping 23 "old dog" board drop hammers operating profitably. Had but one recent model "J" Chambersburg Board Drop.

SOLUTION: Management launched a modernization program calling for nine Ceco-Drops capable of producing a yearly tonnage in excess of the 23 old board drop hammers. Four of the Ceco-Drops are now in operation, shop layout has been revised. Efficiency and production methods have been improved.

COLUMBUS, O.

SITUATION: Job shop with 5 Board Drop Hammers finds equipment obsolete—cannot compete with lower prices and higher production of other more modern shops.

SOLUTION: Initiated 10 year program of modernization to include 15 Ceco-Drops. Three Ceco-Drops already installed to replace board drop hammers.

The gravity drop hammer with short stroke control

SKOKIE, ILL.

SITUATION: One of largest manufacturers of hand tools is planning a new shop. Decided to have modern Gravity Drop Hammers.

SOLUTION: Selected Ceco-Drops, and on a programmed basis is replacing board drop hammers with Ceco-Drops. To date, two 2,000 lb. Ceco-Drops and one 2,500 lb. Ceco-Drop are in operation — "Doing fine". Another 2,500 lb. Ceco-Drop on order.

. . . and remember the Lansing Story?

LANSING, MICH.

Lansing, Mich. is unique among industrial cities in the concentration of drop forging activity in its many factories. It may well claim the title of "Drop Forging Capital of the World". In Lansing are six great forging shops covering 14 acres of land, with a working area of 985,579 sq. ft. All these great forging shops are using Chambersburg Ceco-Drops.

Forge Shop No. 1—installed the first Ceco-Drop in 1947—now forging connecting rods.

Forge Shop No. 2—has installed 6 Ceco-Drops since 1950—making automotive forgings.

Forge Shop No. 3—bought 4 Ceco-Drops since 1948—Commercial and automotive forgings.

Forge Shop No. 4—bought seven Ceco-Drops in the last six years.

Forge Shop No. 5—Purchased 3 Ceco-Drops in 2 years.

Forge Shop No. 6—One of largest in world Installed 11 Ceco-Drops since 1951.



CHAMBERSBURG ENGINEERING CO.

CHAMBERSBURG • PENNSYLVANIA

YOURS FOR THE ASKING...

the AUTOMOTIVE INDUSTRIES

EDITORIAL INDEX (Vol. 113)

covering the issues from July 1 to December 15, 1955, inclusive

Your copy of the newly revised Editorial Index is now available. This handy Index saves valuable time in searching for specific subjects covered in the past issues of AUTOMOTIVE INDUSTRIES, and is made available to you as an additional service.

The new Index quickly summarizes all the editorial articles alphabetically by subject along with page numbers and date of issues in which they appear. Articles are listed under several major classifications with considerable cross-indexing for quick reference.

Please send me, without charge the new AUTOMOTIVE INDUSTRIES Editorial Index covering the 12 issues from July 1 to December 15, 1955, inclusive (Volume 113).

Name .....

Home Address .....

City ..... State .....

Company .....

Company Address .....

City ..... State .....

Mail Coupon today to

Editorial Department

AUTOMOTIVE INDUSTRIES

Chestnut & 56th Sts.

Philadelphia 39, Pa.

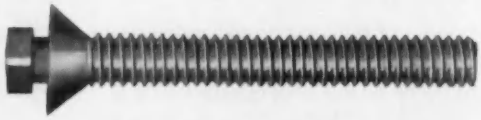
"ELCO SCREWS ARE GOOD SCREWS

ELCO

...ASK A MAN WHO HAS USED THEM"



COLD-HEADED "SPECIALS"



"PRISON SCREWS"

If the title "prison screw" seems strange to you, the explanation is that the extended driver head breaks off when the screw is driven home — thus discouraging removal. The other "specials" illustrate a variety of the forming operations available at ELCO — heading, necking, serrating, thickening, flanging, chamfering, roll threading, and many others. ELCO facilities also include an Engineering Service that will help you design — or re-design — your special screws and similar pieces for *lowest-cost* manufacture. *Always consult your ELCO representative.*

ELCO PRODUCTS

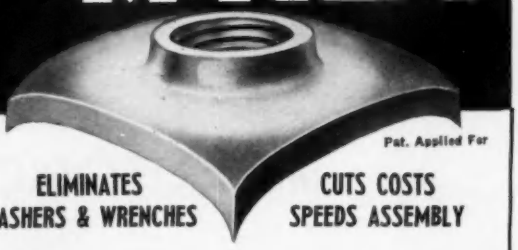
WOOD SCREWS
MACHINE SCREWS
MACHINE SCREW NUTS
TAPPING SCREWS
THREAD-CUTTING SCREWS
PHILLIPS AND SEMS SCREWS
PIPE PLUGS
STOVE BOLTS
CAP SCREWS
LAG SCREWS
DRIVE SCREWS
SPECIAL SCREWS
COLD HEADED PRODUCTS

ELCO TOOL AND SCREW CORPORATION

1914 BROADWAY, ROCKFORD, ILLINOIS

SELF-GRIPPING • SELF-LOCKING

P-M NUT



Pat. Applied For

ELIMINATES WASHERS & WRENCHES

CUTS COSTS SPEEDS ASSEMBLY

High-quality, low-cost nut is made of spring-tempered high carbon steel. Has cut threads and a flange with turned-down corners which bite into material to which applied. Spring flange is deflected during tightening for vibration-proof assembly. Used by leading manufacturers. Available in sizes 6-32 thru 10-32. Other sizes in process.

P-M "ROLL FREE"
DRAWN STEEL STUD

Pat. Applied For



Low-cost "Roll Free" studs effect *unusual savings* over solid studs for most roller mounting. Smooth surface reduces friction for easier rolling, longer life. Standard sizes or to your specifications. For additional savings, ask us about pre-assembled studs and rollers.

Write for FREE Literature and Samples

P-M Division
THE WATERBURY PRESSED METAL CO.
PLAIN STAMPINGS ★ PROGRESSIVE STAMPINGS ★ EYELETS
DRAWN SHELLS ★ SECONDARY OPERATIONS ★ ASSEMBLING
300 CHASE AVE. • WATERBURY 14, CONN.

BABY FORK LIFTS TO EARTH-MOVING GIANTS



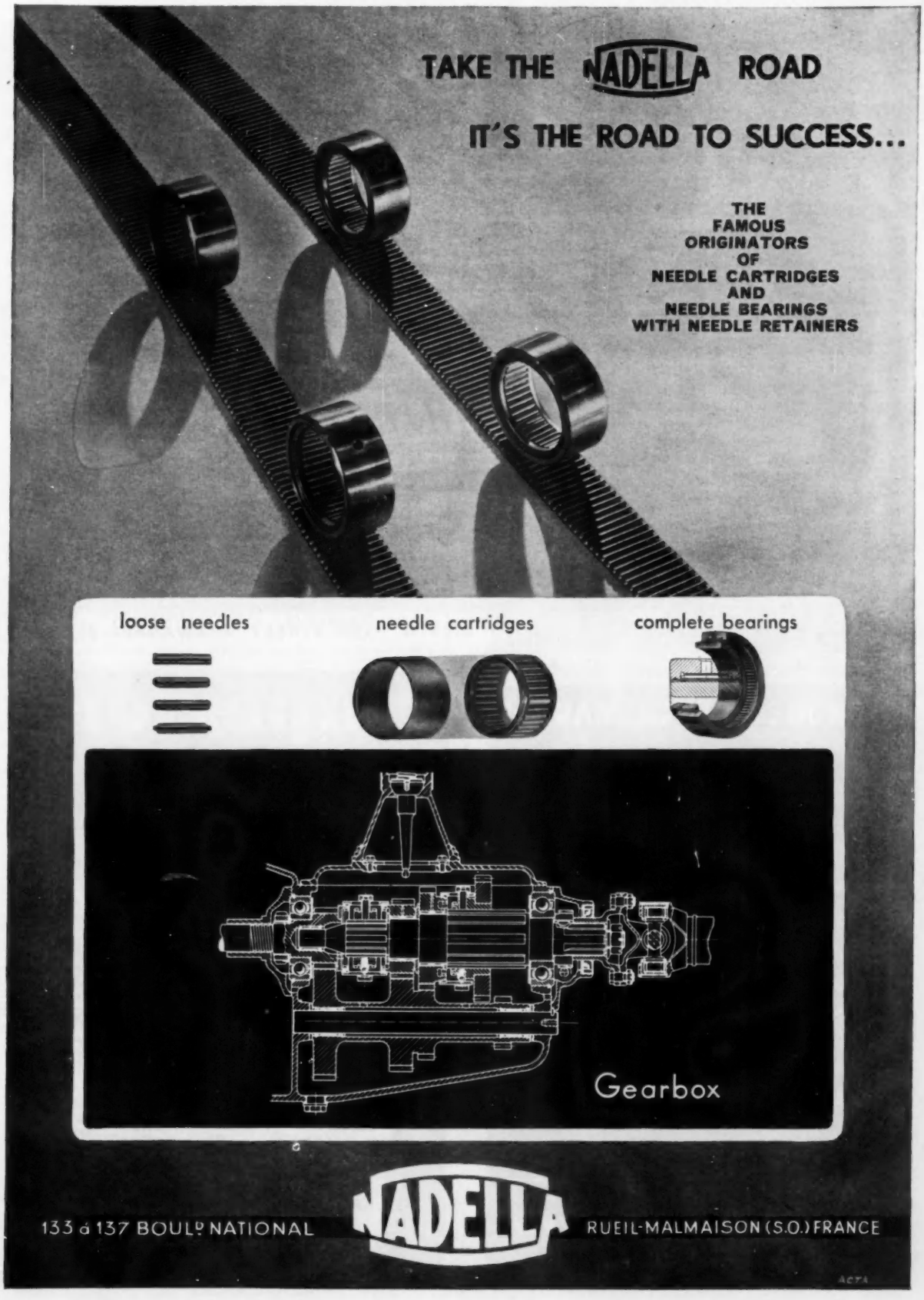
Use TUTHILL SPRINGS *designed for the job!*

FINEST ALLOY STEEL LEAF AND HELPER SPRINGS

Solving unusual spring and load problems is a 74-year-old success story at TUTHILL. Since 1880, we've been designing and making dependable, alloy-steel springs for cars, trucks, fire-fighters, trailers, multiple-axle jobs, dump trucks, jeeps. Whatever your need, call upon TUTHILL's top caliber skills and materials to provide the right springs — built for your job.

TUTHILL SPRING CO.

760 West Polk Street Chicago 7, Illinois


TAKE THE NADELLA ROAD
IT'S THE ROAD TO SUCCESS...
THE FAMOUS ORIGINATORS OF NEEDLE CARTRIDGES AND NEEDLE BEARINGS WITH NEEDLE RETAINERS
loose needles
needle cartridges
complete bearings
Gearbox
133 à 137 BOULd NATIONAL
NADELLA
RUEIL-MALMAISON (S.O.) FRANCE

Champion

BY MILSCO

BODY-FORM POSTURE DESIGN FOR IMPROVED WORK-POWER

Designed to improve the road-ability and comfort-factor of many types of mobile equipment. Full cushion roomy seat equipped with permanently aligned synchronized "no-sag" springs and foam rubber topper. Contour back rest deeply cushioned with foam rubber and jute felt. Snap-on detachable arm rests add to operating comfort and seat versatility. Ball type seat adjuster with finger-lift handle. Get the complete facts on this popular Milsco "Champion" . . . one of the finest cushion seating products of our more than quarter century experience.

SOLD ONLY TO MANUFACTURERS OF ORIGINAL EQUIPMENT

NO. F850 Full Cushion Seat



Milsco MILWAUKEE

DETACHABLE Snap-On Arm Rest
HALF-INCH BALL TYPE SEAT ADJUSTER
NO-SAG SPRINGS WITH FOAM RUBBER
SOLID TUBULAR STEEL FRAME

MILSCO MANUFACTURING COMPANY, 2730 N. 33RD STREET, MILWAUKEE 45, WIS.

"TORQUE WRENCH" MANUAL



Sent upon request

Formulas
Applications
Engineering data
Screw torque data
Adapter problems
General principles

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

Manufacturers of over 85% of the torque wrenches used in industry

Superior

. . . supply and service!



CORBIN Self-Tightening HOSE CLAMPS

Here's the hose clamp you can depend on, both for ready availability and lasting performance — the CORBIN Self-Tightening Hose Clamp.

First, CORBIN Hose Clamps are always available for immediate delivery in all sizes for hoses from ⅜" to 2⅝" diam.—in any amount you require. Even large emergency shipments are no problem! You're always certain of a smooth-flowing supply for your production lines. Second, CORBIN Hose Clamps are manufactured under "pin-point" quality control methods, from steel wire laboratory-tested to CORBIN's high quality standards. You're always certain of a positive, everlasting seal.

Join America's leading automotive and accessory manufacturers. Get CORBIN — *the* superior hose clamp from *the* reliable source. Write or phone for complete details. Corbin Hose Clamp Div., The American Hardware Corp., New Britain, Conn.

The Original Manufacturer of Self-Tightening HOSE CLAMPS

CORBIN

Multiform
STEEL RULE Dies
STEEL RULE
SINCE 1900

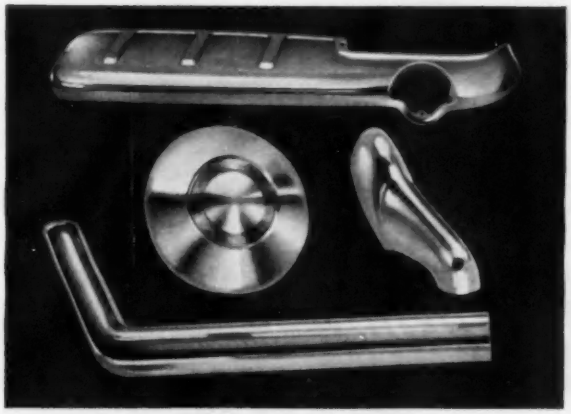
LET US SOLVE YOUR
DIE-CUTTING PROBLEMS
WITH RICHARDS' "TOUGH TEMPER"
STEEL RULE CUTTING DIES

HEADQUARTERS SINCE 1900
FOR DIES AND DIE MAKING
EQUIPMENT AND SUPPLIES

(Punches, Die Boards, Cutting Rule, Eject. Rubber)

FOR AUTOMOTIVE, AIRPLANE, RUBBER,
FELT, INSULATION, SEATING, CORK,
GASKET, TAR BOARD, PLASTICS, ETC.

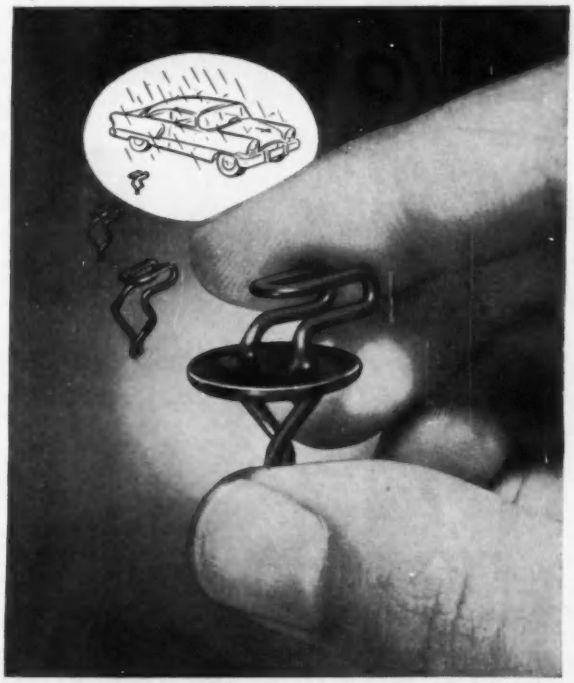
J. A. RICHARDS CO.
903 N. PITCHER
KALAMAZOO, MICH.



For Highest Quality in Polished and Plated Stampings Specify EATON

Now in new expanded quarters, Eaton continues to specialize in the large volume production of polished and plated parts, such as bumper guards, grille and trim parts, and hub caps. Ultra-modern, automatic buffing, polishing, and plating equipment provides precise control of quality to the most critical standards. Inquiries are invited.

EATON MANUFACTURING COMPANY
STAMPING DIVISION • 18001 James Couzens Hwy. • Detroit 35, Mich.
Factory: Cleveland, Ohio



chem·o·sol®

solves another problem by improving

DOOR TRIM PANEL CLIPS

The easy molding properties of **chem-o-sol** have enabled one of the "Big Three" to eliminate a costly hand operation — at the same time improving the product.

Problem was to gasket holes to prevent leakage of rain water through clip holes in door trim panels and into upholstery. The conventional hand operation of applying sealant material had proved time-consuming and unsatisfactory. The search for improved techniques showed **chem-o-sol** to be the perfect material — because of its property of ready moldability to the clip, to provide an integral gasketing unit.

This manageable liquid vinyl dispersion was especially formulated for production line application. Easily converted into a tough, flexible solid by controlled heat at moderate temperatures, **chem-o-sol** saved the manufacturer and customer time and money in this low cost molding operation.

Write to us for information on other applications of **chem-o-sol** by dipping, spraying, slush molding, and die wiping. Learn how our individual formulations of **chem-o-sol** have improved other products — created new ones.

Information courtesy of Mattatuck Mfg. Co., Waterbury, Conn.

Send for Bulletin 141.

Chemical Products CORPORATION
KING PHILIP ROAD • EAST PROVIDENCE R I

BEAM

BUTANE-PROPANE CARBURETION

Makes ANY Gasoline Engine RUN BETTER- LAST LONGER- and Cost You LESS!



FORK LIFTS
TRACTORS
BUSES
TRUCKS
AUTOS
STATIONARY ENGINES

BEAM PRODUCTS MFG. CO.

Formerly THE PARKDALE CO.

Best Buy

BUTANE-PROPANE CARBURETION

3040 ROSSLYN ST. · LOS ANGELES 65, CALIF.

CHapman 5-5791

REGULATORS · CARBURETORS · SOLENOID VALVES

---

use a **GRIPCO LOCK NUT**

- To Hold Tighter
- To Last Longer
- To Cost Less





in these and hundreds of other applications where stress, wear or vibration is a factor. The Gripco Lock Nut, with its simple, one-piece design, has given industry a tighter, more positive holding action for quicker fastener application at less initial cost. No inserts, outside devices or complicated features – the Gripco Lock Nut holding or locking action is inherent in the nut itself – it costs less to use, gives an easier, faster locking and holds tighter for a longer time. Impervious to oil or water. For faster production, lower manufacturing and maintenance costs, look into the Gripco Lock Nut today.

GRIPCO PRODUCTS INCLUDE: Gripco Lock Nuts, New Gripco "Clinch" Nuts, Gripco Hi-Nuts, Gripco Pilot-Projection and Countersunk Weld Nuts with or without Gripco locking feature.

112

GRIP NUT COMPANY

311-P S. Michigan Avenue, Chicago 4, Illinois

QUICK TURNOVER... means LESS COST in Metal Stamping!



And this new Hamilton Shuttle Hand receives and turns over all types of heavy metal stampings, then feeds them to a trim die automatically. It's completely portable and has an 84 inch feed stroke. It's the newest unit in the Hamilton line of automatic pressroom parts handling equipment. Write or call for full information.

Design, Build and "Try-out" Dies for Complete Automation Line

HAMILTON Automation inc.

1490 EDISON AVENUE • HAMILTON, OHIO • PHONE TWINBROOK 2-4581

Insist on VELLUMOID!



Ask the Man Who Knows

Good mechanics use Vellumoid on all oil, water and gasoline connections to insure their work.

THE VELLUMOID COMPANY • Worcester



MILFORD

TUBULAR RIVETS
SPLIT RIVETS
COLD-FORMED SPECIALTIES
RIVET-SETTING MACHINES

MILFORD RIVET

THE
MILFORD
RIVET & MACHINE CO.

PLANTS: MILFORD, CONNECTICUT
HATBORO, PENNSYLVANIA • ELYRIA, OHIO
AURORA, ILLINOIS • NORWALK, CALIFORNIA



WANT TO CUT COSTS?

Then let Southern's HIGH QUALITY Wood Screws work for you, to speed up production

Southern Wood Screws are precision made. Their sharp gimlet points start fast and hold tight. Produce *quality* results at a lower cost, to put your product in the best competitive position.

A Southern Wood Screw for every need, ready to ship from stock. All made to Federal specifications FF-S-111a.

Screws in bulk Lubricated Free upon request. Phillips or Slotted — Flat — Round — Oval.

Wood Screws • Stove Bolts • Dowel Screws
Machine Screws • A&B Tapping Screws
Roll Thread • Carriage Bolts • Hanger Bolts
Wood Drive Screws

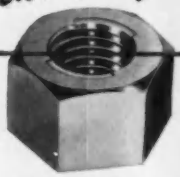
Write for free samples and stock list.
Box 1360-A2

Southern SCREW COMPANY
STATESVILLE • NORTH CAROLINA

Warehouses: New York Chicago
Los Angeles Dallas

WE SELL
RELIABILITY
OF TORQUE

M·F
Uni-Torque®



AND ALWAYS
DELIVER
THROUGH
SIMPLICITY
OF DESIGN

NO EXCESS COST!
NO SLOTS
NO FIBRE
NO PLASTIC

Did you ever check your present lock nut for consistency of torque? It means *everything* in a lock nut! TESTS SHOW that due to more precise manufacturing techniques and *simplicity of design*, the M-F Uni-Torque delivers the most consistent torque.

Mac Lean-Fogg Lock Nut Company
5535 NORTH WOLCOTT AVE.
CHICAGO 40, ILLINOIS

"FEW OLDER IN EXPERIENCE... NONE YOUNGER IN FACILITIES AND DESIGN"

DYKEM
STEEL BLUE®
Stops Losses
making Dies and Templates



Popular package is 8-oz. can fitted with Bakelite cap holding soft-hair brush for applying right at bench: metal surface ready for layout in a few minutes. The dark blue background makes the scribed lines show up in sharp relief, prevents metal glare. Increases efficiency and accuracy.

Write for sample on company letterhead

THE DYKEM COMPANY
2301L North 11th St. • St. Louis 6, Mo.

CUT SCRAPER TIME
END NIGHT CLEANUP & MORNING REBLUING



DYKEM HI-SPOT BLUE No. 107 is used to locate high spots when scraping bearing surfaces. As it does not dry, it remains in condition on work indefinitely, saving scraper's time. Intensely blue, smooth paste spreads thin, transfers clearly. No grit; noninjurious to metal. Uniform. Available in collapsible tubes of three sizes. Order from your supplier. Write for free sample tube on company letterhead.

THE DYKEM CO., 2301L NORTH 11TH ST., ST. LOUIS 6, MO.

Classified Advertisements

World famous Manufacturer of Auto-Electrical and Diesel Injection Equipment wants Salesman to established and work with distributors. Extensive travel in large territory required at start. Compensation Salary plus Expenses. Excellent future Possibilities. Handwritten Applications with complete details of education, previous experience, earnings and salary desired to Box 99, Automotive Industries, 5601 Chestnut St., Philadelphia 39, Pa.

Wanted:—Government Surplus Automotive Spare Parts. Reply Box 10, Automotive Industries, 5601 Chestnut St., Philadelphia 39, Pa.

Synchro-Start
OVERSPEED GOVERNORS
AIRCRAFT AND INDUSTRIAL TYPES
Synchro-Start Products, Inc.
8151 N. RIDGEWAY AVE. • SKOKIE, ILL.



New RAILS *Relaying*
TRACKWORK of ALL KINDS
LIGHT RAILS—12# TO 60#—20'0" & 30'0"
HEAVY RAILS—60# TO 100#—30'0" & 33'0"
JOINT BARS, BOLTS, TIE PLATES, SPIKES & TOOLS, FROGS, SWITCHES, STANDARD & SPECIAL TRACKWORK.
ALSO IN STOCK STEEL SHEETS & PLATES STRUCTURALS and Aluminum Products
SEND US YOUR INQUIRIES
KASLE STEEL CORPORATION
BOX 526 ROOSEVELT PARK ANNEX, DETROIT 32, MICH.—PHONE TIFFANY 6-4000

Now Available in
"SPRAY ON" CANS and in "BULK"
CROWN design layout ink



Just Press the Trigger on the Can

Order it the way you use it most—in handy Aerosol spray can or in pints, quarts, gallons or barrels in bulk. No waste, no mess, no stained hands—Crown ink dries to an excellent scribing texture in a minute. Also ideal for "OK" or "reject" inspection marking.

only $1.59 per 12 oz. can
Order from distributor or mail coupon

CROWN INDUSTRIAL PRODUCTS CO.
819 Amsterdam St., Woodstock, Ill.

Gentlemen: Kindly send us complete information on Crown Design Layout Ink and name of nearest distributor.

Name_____
Company_____
Address_____
City_____ Zone____ State_____

AUTOMOTIVE
INDUSTRIES
Goes into
Leading
Plants in the
Automotive
and Aircraft
Industries

G&O
Radiators
41st Year

ENGINE COOLING RADIATORS
•
HEATERS
•
OIL COOLERS
•

THE G & O MANUFACTURING CO.
NEW HAVEN CONNECTICUT

STAMPINGS

Produced economically in our modern plant for:

AUTOMOTIVE, INDUSTRIAL EQUIPMENT, AIRCRAFT, AGRICULTURAL INDUSTRIES AND OTHERS; will boost your output at material savings.

Our production, engineering and tool-room facilities are geared to the volume usage of your industry.

Send us your inquiries

LANSING STAMPING COMPANY
1157 So. Penn. Ave.
Lansing 2, Michigan
Serving Industry Since 1914

YOU GET
5 SPECIFIC ADVANTAGES
WITH CARTER
FLUID
POWER
UNITS



IMMEDIATE DELIVERY!

1. **STRENGTH—DURABILITY**—Precision honed heavy wall tubing . . . 10 to 1 safety factor . . . heavy duty, high tensile chrome plated rod as standard. Rugged Carter cylinders give long life, leakproof performance.

2. **SIMPLICITY OF DESIGN**—Integral cast steel head and mount united with cylinder wall by means of key-type lock ring. Permits 360° orientation of pipe ports. Leakproof "O" ring seal. Design is far ahead of conventional cylinders.

3. **EASY MAINTENANCE**—Easily disassembled. Cartridge design makes replacement of parts simple, quick. No highly skilled repair help needed. Carter Cartridge Rod Bearing allows on-the-job replacement without disassembly or removal of cylinder from your machine.

4. **SPACE SAVING ADVANTAGES**—No bolts, no tie rods . . . Carter's compact design of both cylinder and mount saves 40% in space.

5. **IMMEDIATE DELIVERY**—Standard models available off-shelf. 1½ through 8" bores. Strokes to 18 feet.

SEND FOR THIS COMPLETE BOUND FILE
Complete details with all essential ordering information.



CARTER CONTROLS, INC.
2802 BERNICE ROAD • LANSING, ILLINOIS (Chicago Suburb)
GRanite 4-3305 (Lansing) • BAyport 1-7186 (Chicago)

Index to

This Advertisers' Index is published as a convenience, care will be taken to index correctly. No allow-

AC Spark Plug Div..... 185
Acadia Products Div..... 10
Aeroquip Corporation 311
Aetna Ball & Roller Bearing Co. 350
Accurate Spring Mfg. Co..... 444
Acromark Co. 552
Aircraft-Marine Products, Inc. 493
Ajax Manufacturing Co..... 545
Alan Wood Steel Co..... 58
Albion Malleable Iron Co..... 450
Alemite 213
Allen Industrial Products, Inc. 487
Allis-Chalmers (Buda Div.).. 310
Allison Division G.M.....532-533
American Brakeblok Div..... 520
American Broach & Machine Co. 366
American Chain & Cable Co... 205
American Chemical Paint Co. 256
American Machine & Foundry Co. .....3rd Cover
American Metal Products Co.. 88
American Steel & Wire Div. 217-305
Anchor Coupling Co., Inc..... 448
Anchor Steel & Conveyor Co. 64-65
Anderson Co., O. L..... 188
Armstrong Cork Co..... 377
Aro Equipment Corp..... 527
Associated Spring Corp..... 81
Auto Specialties Mfg. Co., Inc. 193
Auto Radiator Mfg. Co..... 452
Automatic Spring Coiling Co. 496
Automatic Transportation Co. 463
Automotive & Aircraft Div... 205
Automotive Gear Works, Inc.. 61
Automotive Industries Editorial Index 559
Bakelite Co. 471
Baker Bros., Inc..... 398
Barber-Colman Co. 24-25
Barnes & Reinecke, Inc..... 492
Barnes, W. F., & John...30-31-354
Barnes Co., Wallace..... 81
Barnes Drill Co.....44-45
Barnes, Gibson, Raymond.... 81
Beam Products Mfg. Co..... 564
Bendix Aviation Corporation: Products Div. 66-69
Zenith Carburetor Div..... 296
Bendix-Westinghouse Automotive Air Brake Co..... 475
Bergen Wire Rope Co..... 385
Besly-Welles Corp. 514
Bethlehem Steel Co..... 537
Binks Mfg. Co..... 442
Bliss & Laughin, Inc..... 28
Blood Bros.. Machine Div..... 196
Borg & Beck Div..... 173
Borg-Warner Corp. ...171-172-182
Borg-Warner Spring Div..... 179
Bosch Corp., Robert..... 541
Brandes Press Co..... 508
Brown Corp. 420
Buda Div. Allis-Chalmers Mfg. Co. 310
Buffalo Bolt Co..... 390
Bullard Company 320
Bundy Tubing Company...210-211
Burton Auto Spring Corp.... 12
C. A. V. Div. of Lucas Electrical Services, Inc..... 406
Carboloy Dept. General Electric Co. 352-353
Cardox Corporation 254
Carter Controls, Inc..... 567
Century Gas Equip. Co..... 486
Chambersburg Engineering Co. 558
Chemical Products Corp..... 563
Chicago Pneumatic Tool Co. 394-395
Chicago Rawhide Mfg. Co..... 393
Chicago Rivet & Machine Co. 546
Chicago Screw Co..... 192
Chrysler Corp. (Amplex Div.) 32
Cincinnati Milling Machine Co. 59
Cincinnati Shaper Co.....512-513
Circo Equipment Co..... 531
Clark Equipment Co..... 201
Classified Advertisements 566
Clearing Machine Corp..... 413
Cleveland Cap & Screw Co.... 418
Cleveland Punch & Shear Wks. Co. 543
Columbia-Geneva Steel Div. 200-217-305
Conrad, Inc. 540
Continental Diamond Fibre Div. Budd Co.....488-489
Continental Motors Corp..... 316
Continental Screw Co..... 491
Coolidge Corp. 460
Cooper Precision Products.436-437
Copperweld Steel Co., Ohio Seamless Tube Div..... 517
Corbin Hose Clamp Div..... 562
Cotta Transmission Co. 194
Crane Packing Co..... 18
Cross Company 367
Crown Industrial Products Co..566
Crucible Steel Co..... 473

Dana Corporation (Spicer) 468-469
Danly Machine Specialties, Inc. 34-35-347
Davis & Thompson Co..... 528
Delco-Remy Div. G. M.....206-207
Detroit Controls Corp. 518
Detroit Edison Co..... 360
Detroit Gasket & Mfg. Co.... 312
Detroit Steel Products Co..... 198
Dewey & Almy Chemical Co.. 189
Diamond Chain Co..... 317
Diesel Energy Corp..... 258
Dole Valve Co..... 204
Donaldson Co., Inc..... 314
Dualoc Drive, Inc..... 220
Dunbar Brothers Co..... 81
du Pont de Nemours & Co., Inc.
Elastomers 379
Photo Products Dept..... 529
Polychemicals 451
Dykem Co. 566

Eaton Manufacturing Co.:
Stamping Div. 563
Valve Div. 455
Elastic Stop Nut Corp..... 234
Elco Tool & Screw Corp..... 560
Electric Auto Lite Co..... 401
Elox Corp. 449
Enjay Co., Inc..... 495
Evans Products Co..... 501
Ex-Cell-O Corp. 363
Excelsior Leather Washer Mfg. Co. 446

Fairchild Engine & Airplane Corp. 556
Fairfield Mfg. Co..... 500
Farval Corp. 82
Fasco Industries, Inc..... 502
Federal Machine and Welder Co. 549
Federal-Mogul-Bower Bearings, Inc.
Bearings Co. of Amer..... 209
Federal-Mogul Div. 433
Fellows Gear Shaper Co.....26-27
Ferry Cap & Set Screw Co.... 497
Follansbee Steel Corp..... 482
Foote-Burt Company 80
Ford Motor Co. (Industrial Engine) 297
Formed Tubes, Inc..... 400
Fram Corp. 39
Frenchtown Porcelain Co..... 308
Frontier Bronze Corp..... 409
Fuller Manufacturing Co...202-203

G & O Manufacturing Co.... 567
Gardner-Denver Co. (Keller Tool Div.) 358
Gillett & Eaton, Inc..... 318
Gisholt Machine Co.....20-21
Gits Bros. Mfg. Co..... 63
Gordon Co., Claud S..... 550
Gorton Machine Co., Geo..... 555
Goshen Rubber Co., Inc..... 552
Great Lakes Steel Corp..... 361
Greenlee Bros. & Co..... 46
Grip Nut Company..... 564
Guide Lamp Div..... 52
Gunite Foundries Corp..... 199

Hamilton Automation, Inc.... 564
Handy & Harman..... 422
Hannifin Corp. 19
Hansen Mfg. Co..... 472
Harrington & King Perforating Co. 219
Hartford Machine Screw Co... 300
Harvey Aluminum Sales, Inc.. 397
Hassall, Inc., John..... 498
Heald Machine Co.....2nd Cover
Heppenstall Co. 315
Hercules Motors Corp..... 465
Hohman Plating & Mfg., Inc.. 550
Holley Carburetor Co..... 309
Hoof Products Co..... 319
Hunter-Douglas Aluminum Corp. 503
Hyatt Bearings Div..... 5
Hy-Pro Tool Co..... 373

Illinois Tool Works..... 29
Imperial Brass Mfg. Co..... 53
Index Machine Co..... 534
Industrial Filtration Co..... 426
Ingersoll-Rand 41
Ingersoll Steel Div..... 181
Inland Manufacturing Div.... 557

Jacobs Co., F. L..... 445
Janitrol Div. Surface Combustion Corp. 524-525
Johnson Products, Inc..... 464
Jomac, Inc. 474
Jones & Laughlin Steel Corp.. 11
Jones Motrola Corp..... 548

Kaiser Aluminum & Chemical Sales, Inc. 428-429
Kalamazoo Div. New York Air Brake Co. 499
Kasle Steel Corp..... 566
Kearney & Trecker Special Machinery Div. 40
Keller Tool Div. Gardner-Denver 358
Kelsey-Hayes Wheel Co..... 216

Advertisers

and not as part of the advertising contract. Every once will be made for errors or failure to insert.

Kent-Owens Machine Co..... 507
King-Seeley Corporation 195
Kingsbury Machine Tool Corp. 186-187

Lamb Electric Company..... 494
Lansing Stamping Co..... 567
La Salle Steel Co..... 197
La Salle Tool, Inc..... 453
Le Blond Machine Tool Co., R. K. 476-477
Leece-Neville Co. 430-431
Lees-Bradner Co. 441
Lepel High Frequency Labs, Inc. 490
Lindberg Engineering Co....54-55
Linde Air Products Co..... 298
Link Belt Co..... 301
Lipe-Rollway Corp. 414
Littell Machine Co., F. J. ..540-548
Lodge & Shipley Co..... 539
Long Manufacturing Div..... 174
Lord Mfg. Co..... 483
Luber-Finer, Inc. 396

M. B. I. Export & Import, Ltd. 553
Machine Products Corp..... 392
MacLean-Fogg Lock Nut Co.. 566
Magnethermic Corp. 391
Mahon Co., R. C..... 351
Mallory & Co., Inc., P. R..... 36
Marmon Products Co., Inc.... 311
Mattison Machine Works..... 2
McKay Machine Co..... 459
McLouth Steel Corp..... 417
McQuay-Norris Mfg. Co..... 292
Mechanics Universal Joint Div. 175
Michigan Tool Co.....407-408
Micromatic Hone Corp..... 403
Miehle-Dexter Supercharger Div. 294
Milford Rivet & Machine Co.. 565
Miller Fluid Power Co..... 84
Milsco Mfg. Co..... 562
Milwaukee Div. 81
Miner, Inc., W. H..... 191
Minnesota Mining & Mfg. Co.. 223
Mitchell-Bentley Corp. 226
Modern Industrial Engineering Co. 538
Moline Tool Co..... 510
Moraine Products Div..... 47
Morse Chain Co.... 176
Motch & Merryweather Machinery Co. 423
Murray-Way Corp. 467
Muskegon Piston Ring Co..... 299

Nadella 561
National Acme Co..... 387
National Broach & Machine Co. 355
National Malleable & Steel Castings Co. 509
National Motor Bearing Co... 412
National Screw & Mfg. Co.... 86
National Steel Corporation... 361
National Tube Div.....200-217
New Departure Div..... 76
Niagara Machine & Tool Works 56-57

Oakite Products, Inc..... 388
Ohio Crankshaft Co..... 303
Ohio Division 81
Ohio Seamless Tube Div. Copperweld Steel Co..... 517
Oil Dri Corp..... 544
Olsen Testing Machine Co., Tinius 432
Orchard Paper Co..... 402
Osborn Manufacturing Co.... 50

Packard Electric Div..... 427
Palnut Company 440
Parker Rust Proof Co..... 224
Patton Mfg. Co., Inc..... 544
Pennsylvania Salt Mfg. Co.... 345
Perfect Circle Corp..... 260
Pesco Products Div. B-W Corp. 177
Peters-Dalton, Inc. 359
Pioneer Engineering & Mfg. Co. 554
Potter & Johnston Co..... 48
Pratt & Whitney Co., Inc..... 435
Purolator Products, Inc..... 416

Ransburg Electro Coating Corp. 462
Rathborne, Hair & Ridgway Box Co. 506
Raybestos-Manhattan, Inc. (Equipment Sales Div.)...22-23
Raymond Mfg. Co..... 81
Reliance Electric & Engineering Co. 389
Republic Steel Corp.....484-485
Richards Co., J. A..... 563
Richardson Co. 225
Rigidized Metals Corp..... 208
Rochester Products Div..... 383
Rockford Clutch Div. B-W Corp. 178
Rollway Bearing Co..... 257
Ross Gear & Tool Co..... 9
Ross Operating Valve Co..... 346
Rotor Tool Co..... 322
Russell, Burdsall & Ward Bolt & Nut Co..... 212
Ryerson & Son, Inc., Joseph T. 70

S-P Mfg. Corp..... 470
Saginaw Steering Gear Div... 515
Sahlin Engineering Co., Inc... 425
Schwitzer Corp. 375
Sciaky 37-38
Scott Paper Co.....410-411
Sealed Power Corp..... 302
Seamless Rubber Co..... 404
Seneca Falls Machine Co...504-505
Severance Tool Industries, Inc. 565
Shakeproof Div. Illinois Tool Wks. 29
Sheffield Corp. (Gage Div.)... 479
Simmons Fastener Corp.....42-43
Simonds Abrasive Co..... 443
Snyder Tool & Engineering Co. 356-357
Southern Screw Co..... 565
Stackpole Carbon Co..... 434
Standard Pressed Steel Co.... 255
Standard Tube Company..... 424
Sterling Aluminum Products, Inc. 295
Stevens, Inc., Frederick B.... 526
Stewart Corp., F. W..... 14
Stewart-Warner Corp. Alemite Div. 213
Instrument Div. 535
Strom Steel Ball Co..... 457
Stuart Oil Co., D. A..... 456
Sturtevant Co., P. A..... 562
Sun Oil Co..... 15
Sundstrand Machine Tool Co. 348-349
Superior Steel Corp..... 405
Superior Tube Co..... 228
Synchro-Start Products, Inc... 566

Taylor Dynamometer & Machine Co. 516
Taylor-Winfield Corp. 521
Teleflex, Inc. 536
Tennessee Coal & Iron Div. 217-305
Texas Company 78
Thompson-Bremer & Co. 3rd Cover
Thompson Products, Inc.: Electronics Div. 419
Valve Div. 83
Thomson Industries, Inc..... 466
Thor Power Tool Co..... 8
Timken Roller Bearing Co. Back Cover
Tinnerman Products, Inc..... 522
Tomkins-Johnson Co. 530
Torrington Co. 293
Tourek Mfg. Co., J. J..... 6
Towmotor Corp. 547
Transitier Truck Co..... 421
Transue & Williams..... 511
Tulsa Winch Div. Vickers, Inc. 458
Tung Sol Electric, Inc..... 542
Tuthill Pump Co..... 478
Tuthill Spring Co..... 560
Twin Disc Clutch Co..... 362

U. S. Axle Co., Inc..... 4
Union Steel Products Co..... 454
United-Carr Fastener Corp... 184
United Engine & Machine Co. 306-307
United Specialties Co.....16-17
United States Rubber Co..... 381
United States Steel Corp. 190-200-217-304-305
United States Steel Supply Div. 190-217
Universal Oil Seal Co..... 536
Upholstery Leather Group.... 570

Vascoloy-Ramet Comp. ...214-215
Vellumoid Co. 564
Verson Allsteel Press Co..... 60
Vickers, Inc. 461
Victor Mfg. & Gasket Co..... 7

Wagner Bros., Inc.....364-365
Wagner Electric Corp..... 227
Waldes Kohinoor, Inc..... 13
Warner Automotive Parts Div. 180
Waterbury Pressed Metal Co.. 560
Waukesha Motor Co.....1-290-291
Wausau Motor Parts Co....480-481
Wean Equipment Corp..... 447
Webb Co., Jervis B..... 415
Webster Electric Co..... 221
Western Felt Works..... 10
Wheland Company 218
Whittington Pump & Engineering Corp. 49
Wisconsin Motor Corp..... 519
Wittek Mfg. Co..... 62
Wood Co., R. D..... 51
World Bestos 554
Wyman-Gordon Co. 222

Yale & Towne Mfg. Co..... 439
Yates-American Machine Co.. 386
Young Radiator Co..... 33
Young Spring & Wire Corp., L. A. 399
Youngstown Sheet & Tube Co. 551

Z & W Machine Products, Inc. 438
Zagar Tool, Inc..... 523
Zollner Corp. 313



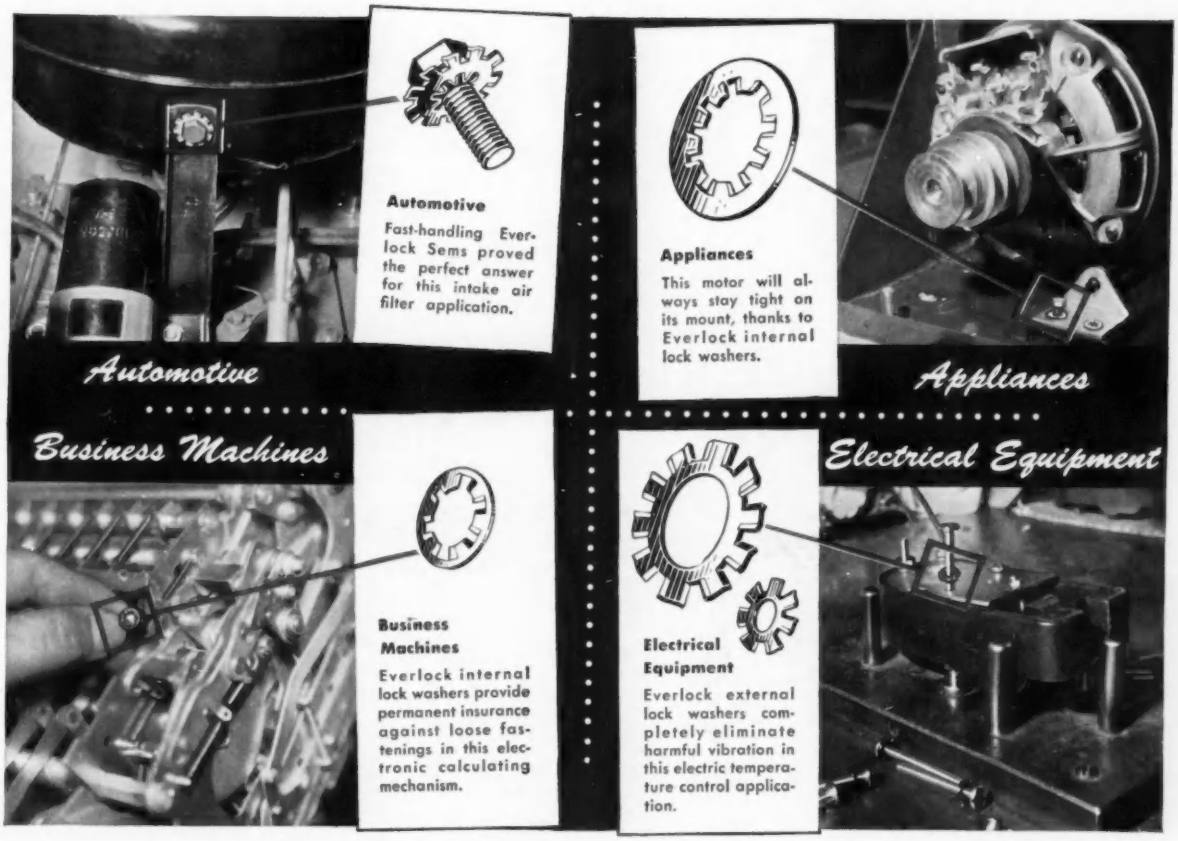
For comfort... genuine Leather

Genuine leather upholstery makes life much more comfortable
for your customers. Entering and leaving the car is easier. Leather provides
the right amount of firm, comfortable support while they are riding.
Because it "breathes", it is quicker to cool in summer, quicker to warm up in winter.
For comfort, for value, for beauty . . . and for sales, sell genuine leather!

Only genuine leather wears as well as it looks

THE UPHOLSTERY LEATHER GROUP, INC., • **99 West Bethune, Detroit 2, Mich.,** • 141 E. 44th Street, New York 17, N.Y.

lick loose fastenings... FOR GOOD!



with low-cost *Everlock* lock fasteners

Loose fastenings mean lost business . . . leave you wide open for costly rejections and customer complaints. Yet loose fastenings are probably your easiest-to-solve problem. Simply use Everlock lock fasteners. Vibration, constant jarring, impact—all only serve to *tighten* Everlock's bulldog bite.

Whatever your product, however it's assembled —don't overlook Everlock. Stock sizes and types, or special designs lick *your* fastening problems *for good.*

Another AMF Product

Everlock
INDUSTRIAL FASTENERS

FREE SAMPLE KIT

Put Everlock lock fasteners to the test on your own products. For your free sample kit and your copy of the brand new Everlock catalog, mail this coupon.

THOMPSON-BREMER & CO.
Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY
512 North Dearborn Street • Chicago 10, Ill.

Please send me:
- ☐ New Everlock Catalog.
- ☐ Free sample kit of Everlock Fasteners.

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____



WHENEVER YOU SEE the number HM89410 on the cup—and HM89446 on the cone—you're sure the tapered roller bearing is a certain size commonly used on pinions. But when you also see the trademark "Timken", you can feel it's your lucky number. You're getting *extra* quality and service.

THIS IS YOUR LUCKY NUMBER



HER JOB IS NEAR PERFECTION. She uses this machine to measure bore size and roundness of Timken bearing cones in ten-thousandths of an inch. Cones are then sorted into sub-sizes by O. D. and matched with rollers that have also been sub-sized. It's this precision manufacture that pays off in longer life, less maintenance.



QUALITY CONTROL YOU CAN'T GET ELSEWHERE. To control Timken® bearing quality every step of the way—from melt shop through final inspection—we make our own steel. No other U.S. bearing manufacturer does. Produced in nine huge electric furnaces, Timken bearing steel is the finest made.



WHAT'S AHEAD? This machine studies the effects of vibration on bearings. It's part of our program to make bearings last even longer. When you specify a bearing number, always specify "Timken", too. And for *full* value, always use a Timken bearing cone with a Timken bearing cup. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TIMKEN is number 1 for VALUE

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ▯ AND THRUST ▯ LOADS OR ANY COMBINATION ✳